

February 1986

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The Monthly Magazine For Sanyo Personal Computer Users

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With Ease**

**Create Colorful Graphics
With 'Finger Paints'**

Plus:

**Changing Logged Drives
Within BASIC**

and

**Review of the
8086 V20 CPU Chip**

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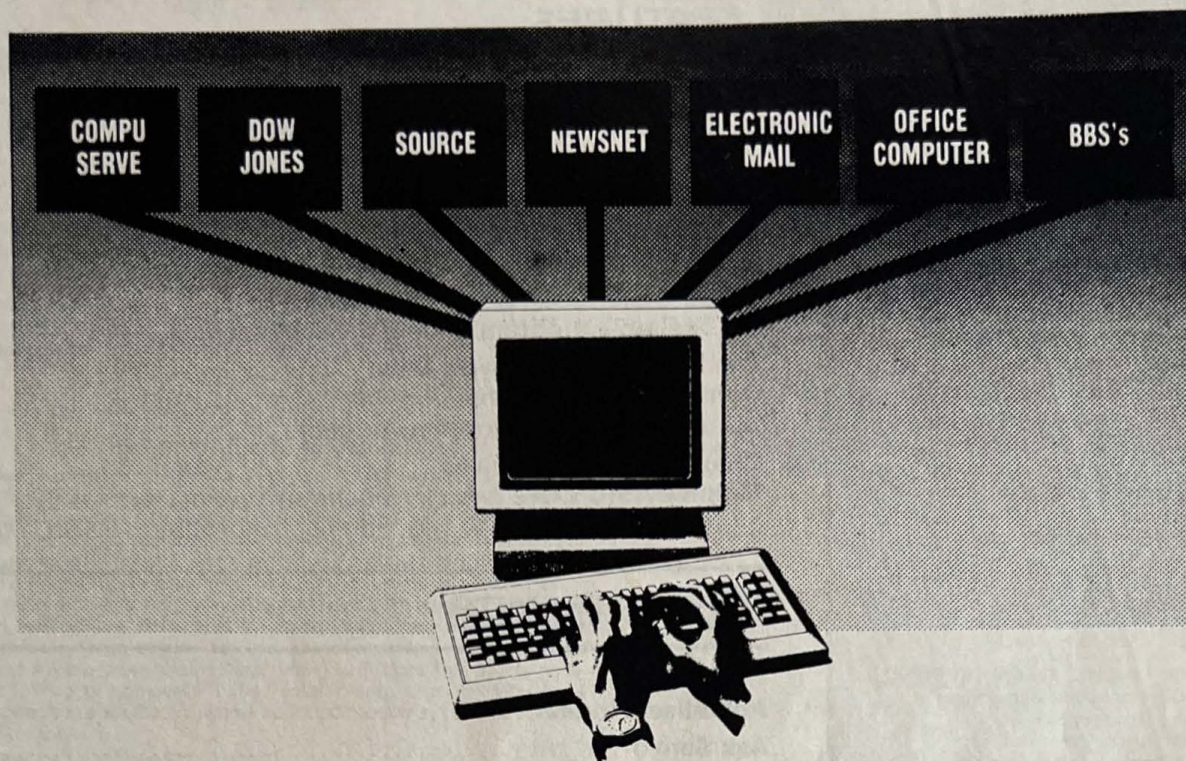
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The Monthly Magazine for
Sanyo Personal Computer Users

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Advertising Representative Kim Vincent
Advertising Assistant Debbie Baxter (502) 228-4492
WEST COAST OFFICE
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- The small disk symbols appearing beside features and regular columns indicate that the program listings with those articles are on this month's **SOFT SECTOR ON DISK**, ready to LOAD and RUN. For full details, see the **SOFT SECTOR ON DISK** ad on Page 35.

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SOFT SOAPBOX

Although this is the February issue, it is the eve of 1986 as this issue is being put to bed. Most of us make resolutions for the new year to do things such as quit smoking, get into better physical shape and to stop procrastinating. The main objective (resolution) of **SOFT SECTOR** is to provide you with as many useful programs, helpful tutorials and first rate services as we possibly can in each issue.

Something helpful to be found in this issue is the "Delphi Quick Reference Card," found on pages 47 and 48. The card contains all the necessary commands needed for quick and easy movement around the MS-DOS SIG. It is similar to the one you can order from Delphi, but has been modified to suit your specific needs. For your convenience, we have put the card on a double-sided page in the magazine so you can remove it easily and place it next to your Sanyo — and your modem — when you log onto Delphi.

As the old year ends, regrettably so does the monthly column by Danny Humphress, "Mastering MS-DOS." Danny has taken on new (and time consuming) responsibilities by assuming the position of managing editor of one of our sister publications, *PCM, The Personal Computer Magazine for Tandy Computer Users*. Even though you won't see a regular column by Danny, you may see

an article from time to time. We know you, along with us, will miss Danny's helpful tutorials.

This month, as promised, you will find an article on Sanyo's new portable, the MBC-675. One of our top reviewers, Jim Pile, goes into detail on the features of the machine and compares it to other portables currently available. Jim serves as one of our local authorities on computers as he has five different computers in his own home.

We would also like to mention that our new sister publication — *VCR, The Home Video Monthly* — is now on the stands. Many of you have probably noticed the ad we have been running for the past few months in **SOFT SECTOR**. We're proud of our new publication and think you'll find it as interesting and entertaining as we intend it to be.

As the year begins and February rolls around, we are once again faced with what is, for most people, an unpleasant task — filing tax returns. To help make the job a little more pleasant, look for the program *TaxFile*, an advance tax planning program by James Bryant on Page 10. Some other programs and reviews of interest in this issue are "Changing Logged Drives Within BASIC," by Dave and Patti Neuendorf, who you may remember as the authors of *Spider Graphics*; *Finger Paints*, a colorful graphics program; and a review of the NEC V20 CPU chip by Bob Jack, author of *Mega-DOS* found in the January '86 issue of **SOFT SECTOR**.

Next month you can expect to see an in-depth review of the new desktop model Sanyo, the MBC-885, reviews on an excellent CAD program and a new BASIC handbook.

As we go into a new year, we at **SOFT SECTOR** would again like to promise the quality publication you've come to expect each month and wish you all the best for the new year.

— Belinda Kirby



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 - reads, writes and formats 400K DSDD diskettes
 - on quad-density drives:
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 - will not run Prolok™ disks.

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PrintScreen550 is an option to any A-OK DOS for a meager \$24

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LETTERS TO THE EDITOR

FOLLOWING UP

Editor:

This is in regard to a letter sent to **SOFT SECTOR** looking for a font for a certain printer.

I was recently looking through some mail-order catalogs and I ran across a font that supports the Epson 80/100 (IBM PC printer), IDS460 or Prism 80, IDS 560 or Prism 132, NEC 8023, Prowriter, C-Itoh 8510, Datasouth 180, Okidata 82/92 and the Okidata 83/84/93. The name of the program is called *Type Faces* by Alpha Software Corporation. It is sold by Pascal & Associates, 136 E. Rosemary St. NCNB Plaza, Chapel Hill, NC 27514, (919) 942-1411.

The most recent price I have is \$125 and the catalog was written 11-6-84.

Jay Rosa
Liverpool, NY

BRIDGE & BASEBALL

Editor:

I have seen a number of bridge programs lately. Some have gotten excellent reviews by bridge experts but they are all written for the IBM. I have contacted the companies that put them out, as well as Sanyo, but can get no information as to any bridge program which has been tested on a Sanyo. Help!! If any of your readers know of a good bridge program that will work with my Sanyo MBC-555, I'd really like to hear from them. My address is: 238 South Valley Rd., 07052. Thank you.

Ray Fiorillo
West Orange, NJ

Editor:

Thank you for an excellent magazine. I have read it from beginning to end since your first issue.

I am interested in purchasing the *APBA Major League Players Baseball Master's Edition* for the IBM computer. The game is written by the APBA Game Company and is published by Random House Software. I have been unable to determine if it will run

on the Sanyo 550 with or without a video board.

I hope some reader can answer my question.

Donald Ellsworth
Enon, OH

FYI

Editor:

After reading the enthusiastic review of *WordPerfect 4.0* in the September '85 issue, I purchased the program and as promised, it worked on my 555-2 with 256K (without a graphics board).

I recently received the 4.1 update and have been unable to get the program to load. I get either an "Interrupt Trap Halt" message on the A drive or "Error: Divide Overflow—Press Any Key to Continue" on the B drive—after which no further keystrokes do anything.

I have talked with SSI technical support by phone and they instructed me to return the disks, as it is possible they are defective.

However, they said that as they do not support the Sanyo 555, they do not have a 555 on which to try out the program.

Has anyone else had difficulty getting the program to load? If the 4.1 program does not work or cannot be repatched to be made to work, surely this is something that other readers will want to know about before they purchase the program.

Jody Briggs
Seattle, WA

Editor's Note: Thank you for letting us know about this problem. As of yet, we have not heard of any problems with WordPerfect. The review we ran was of 4.0 and we have not seen the updated 4.1 version.

CONSTRUCTIVE COMMENTS

Editor:

I have comments on several items in the November and December '85 issues.

In the November "Ask Sanyo" column, James E. Parlatore complained about getting a "Direct Statement in File" error when trying to load a program into GW-BASIC. As reported in an earlier issue of **SOFT SECTOR**, this is probably the result of trying to load a Sanyo BASIC program which was not saved with the 'A' option.

Two letters in the December issue complain that when you combine the *WizStar* and *BlitzStar* patches to **WS.COM**, the top line of the function key labels disappears. A

PAR
AVION

patch you can apply for this problem (to a back up copy of WS.COM, of course) is:

```
DEBUG WS.COM
E 4E7E 16
W
```

This changes the number of lines cleared parameter in a BIOS call.

In the December review of *Turbo Drive* 550, John Schlosser recommends copying COMMAND.COM onto the RAM disk. Unless you have lots of RAM, this is a wasteful use of a scarce resource. Rather, include in the CONFIG.SYS file on your boot disk (MS-DOS 2.11) the line:

```
SHELL=A:\COMMAND.COM A:\ /P
```

The first parameter tells the system where to look for COMMAND.COM on initial boot, the second where to look for COMMAND.COM when the transient portion needs to be reloaded, and the /P tells COMMAND.COM that it is the first program running. (See the MS-DOS 2.11 technical reference manual, Page D-2 for more details.)

In the December "Business Sector" column, Stan Smith asks for a BASIC program to list a *SpellStar* dictionary. I wrote a program called SPELLIST.BAS which does this. It is available on the Sanyo New England BBS at (617) 396-8306, 300/1200 Baud, 24 hours, 7-bit, even parity (8-bit for downloads). Or send \$5 and a formatted SSDD or DSDD disk in a reusable mailer (\$10 for 800K DS-DOS format) to: Robert W. Babcock, Sanyo New England Users Club Librarian, 4 Reeves Road, Bedford, MA 01730.

If requested, the returned disk will also include a selection of public domain software from our club library; please indicate any specific requests, or general areas of interest.

Robert W. Babcock
Bedford, MA

MARGINAL QUIRK

Editor:

EasyWriter (EW) and *MicroSpell (MS)* can work together. When *MS* runs on an *EW* text, it resets your margins. When you try to make any editing changes, the computer will lock up or you will be informed there is "insufficient memory press return." When you press RETURN, the computer will lock up.

To solve this quirk after loading your file to disk and starting up *EW*, do the following:

```
G "your filename"
PF1 to enter test
PF7 to change margins
[Mine showed (LM)28261 (RM)8308
 (IND)30490]
0 (ENTER) 65 (ENTER) 0 (ENTER)
[or whatever margins you are using]
```

Note: You cannot completely correct the display. Do not worry! The settings will correct when you make the final entry. To check your margins enter PF7 again and your margins should be restored. Now you can edit to your heart's content.

I won't tell you what I went through to find this quirk, but my kids are no longer grounded from my computer and I still have to reinstall my video driver board.

Steven H. Taylor
Tacoma, WA

RANDOM RND

Editor:

In the November '85 issue of *SOFT SECTOR*, Herman Leon showed that the Sanyo BASIC RND function is not truly random and asks if there are better algorithms. The following is one I have used that seems to pass the autocorrelation test in Mr. Leon's letter.

```
10 DEFDBL A-Z
20 CLS
30 SEED = .5284163H
40 X=997H * SEED
50 X=X - INT(X)
60 SEED = X
70 X=640*X
80 Y= 997H * SEED
90 Y=Y - INT(Y)
100 SEED = Y
110 Y=200*Y
120 PSET(X,Y)
130 GOTO 40
```

With the seed given, it purportedly passes other random number tests as well. It must always be used with double precision arguments or it will repeat in less than 100 random numbers generated.

Raymond M. Ingels
Monterey Park, CA

FORMAT DO LOOP

Editor:

This letter serves two purposes: to show that *SOFT SECTOR* is read and re-read, and to offer a useful comment on "Avoiding Format Accidents" by Roger L. Boese under "Helpful Hints" in the May '85 issue.

The patch to Sanyo DOS 2.11, with Video RAM to automatically default to Drive B when formatting, works fine. This, in fact, is a very desirable precaution for users of double disk drive Sanyo computers. However, I did have a problem when I wished to format and at the same time make a copy of the operating system to produce a bootable diskette. I was in an endless "do loop" of "Insert DOS diskette in Drive A and strike any key when ready."

I find that the following will work:

With the DOS diskette in Drive A, boot up and log to B.

Move the DOS diskette (with FORMAT.COM) to Drive B.

Type Format/s and hit ENTER.

At the onscreen prompt; "Insert new diskette in Drive B and strike any key when ready," replace DOS diskette in Drive B with the new diskette and strike any key.

I presume that an expert in assembler could write a patch for DEBUG to alter the FORMAT/S operation for a more elegant solution. However, my frequency of making bootable diskettes is much lower than formatting diskettes for files. Thus the extra handling of diskettes during FORMAT/S is a very small premium to pay for the protection against inadvertently formatting one's DOS diskette when hastily formatting a diskette for files. I thank Mr. Boese for his contribution.

I. C. Flanders
Knoxville, TN

AN ADDITIONAL FIX

Editor:

John R. Kelty's article on Page 88 of the April '85 issue of *SOFT SECTOR* contains an excellent fix for the TEAC-54A's disk drive bezel lights suggesting the installation of a nor-gate and a resistor. When hooked up as described, it turns on the drive lights while the drive runs.

The idea can be taken a step further: Instead of disconnecting the existing lights, drill a 9/64 inch hole in the front plastic panel of the drive one and a fourth inches to the right of the center of the light (at the location of a square shaped indentation in the metal cover inside) and connect the nor-gate output to an LED (available at Radio Shack) which when slipped into the hole serves as the drive run light. The function of the original indicator light remains undisturbed showing the drive last accessed. (If the LED fails to come on, reverse the anode-cathode polarity.)

Joseph Kemeny
Toronto, Canada

SIMPLE STROKES

Editor:

Those who welcomed Bob Copps' idea for deleting word left with a PF key ("Letters To The Editor," November '85) may like to try ^S^G^A^T. This takes out the space too, if there is one, and still works if there is not.

Another key setting which I find useful is ^F^S^S^G, which removes a punctuation mark at the end of a word. If text is right justified, a destructive backspace may be needed as well.

Tony Bomford
Canberra, Australia

TAX FILE

Around the first of April each year, most of us are either anxiously awaiting a refund from our Federal Income Tax return or dreading the thought of filing one. Which of the two categories we fall into obviously depends on a number of things; for example: how many exemptions we claim, whether we have an IRA account or not, how much we give to charity, etc.

Most of us receive paychecks either monthly or weekly, along with a stub that indicates our year-to-date totals of income, federal tax withholdings, etc. If you should sit down early in the year and use these totals to fill out a trial federal tax return, you will most probably find that a sizable refund is due you.

However, this is not an entirely accurate picture. I tried this procedure by setting up *CalcStar* to do the calculations. Every week I would key in the new figures and my refund was getting smaller and smaller. My conclusion was that the results obtained were accurate only if I filed my taxes immediately and had no more income to add. As my income increased, I was being pushed into higher and higher tax brackets. Thus, the difference between the amount withheld and the amount owed gradually diminished.

The following program allows you to compute your approximate tax liability at any time during the year and then gives you a more accurate projection for December 31st of that year. This will allow you to perform WHAT IF calculations similar to the type used in *CalcStar*.

Commercial tax programs are relatively expensive and they all require annual updates. I believe the yearly modifications for this program will be

(James Bryant is an electronics hobbyist. He began computing with a TI99/4A in 1980 and purchased a Sanyo MBC-555-2 in 1984. He has written several financial programs for personal use and may be contacted at 249 Phillips Dr., Hopewell, VA 23860; 804-458-5978.)

**Compute
your
approximate
tax liability
at
any time
during
the year**

By James Bryant

considerably simple with listings 1 and 2. Listing 1 will create a tax table for married couples filing jointly. Listing 2 will do the same for single taxpayers.

The data statements included in the programs were taken from a financial magazine. If you need a different table from the ones in the listings, your local library should be a good source for this type of information. Listing 3 is a program used to access the files created in listings 1 or 2 and display the table of your choice or optionally compute your income tax. After selecting one of the tax computation options, you will be prompted to enter the date, income, deductions, exemptions and so forth.

After completing this segment, the taxes will be computed and pertinent data will be displayed on the left side of the screen. On the right side of the screen, you will be prompted for a normal projection for each item. An entry of 'y' will give a projection for the entire year based on your actual entry for the item involved. For example, if your wages are \$10,000 at the end of June, your projected wage will be approximately \$20,000 for the year. If you enter 'n' for the "normal projection prompt," you will be prompted for a projection factor. A factor of '1' will hold the item constant, a factor of '2' will double the item.

Suppose, at the time of your calculations, you had deposited \$1,500 into an IRA account and you anticipate depositing an additional amount of \$500 by year end. You then would enter a "projection factor" of 1.33, 500 divided by 1500 = .333333. After your final entry, you will have a complete display of actual and projected results. (Note: You don't have the option of entering a projection factor for tax withholdings.) The normal projection factor is used for this item. Be sure, upon entering the tax calculation segment, to enter the correct date (month and day). The accuracy of any item for which you have selected the normal projection factor will be determined by this entry. Enter the last month and day of the month

for the pay period covered by your check stub.

Each year the tables will need to be updated. All you need do is change the data statements in listings 1 and 2, and rerun the programs for new files which include the new tables.

Type in Listing 1, save it under the name TAXFILE.MAR and run the program. Your first file, entitled TABLEMAR.TAX will be created. Next, type in Listing 2, save it under the name TAXFILE.SNG and run

the program. Your second file, entitled TABLESNG.TAX is created. Now type in Listing 3 and save it under the name FEDTAX. Listing 3 computes your taxes by accessing the files created by running listings 1 or 2 and comparing your taxable income with each record on the file until it falls within the range of a particular record. When this occurs, the file is closed and your tax is computed.

Because tax laws change so frequently, no provision has been made for itemizing

deductions or computing capital gains or losses, however you may include these items by precalculating them and entering them under other income or other deductions.

The program is simply designed to give you a rough estimate of your tax liability and provide a means by which you can do a little advance tax planning. No doubt some of you will modify or expand the program to more accurately conform to your particular needs.

Listing 1: TAXFILE.MAR

```
60 OPEN "R",#1,"TABLEMAR.TAX"
70 FIELD #1,10 AS MIN$,10 AS MAX$,10 AS TAX$,10 AS PER$,10 AS EXCESS$
80 FOR R=1 TO 15
90 READ MIN#,MAX#,TAX#,PER#
100 RSET MIN$=STR$(MIN#)
110 RSET MAX$=STR$(MAX#)
120 RSET TAX$=STR$(TAX#)
130 RSET PER$=STR$(PER#)
140 RSET EXCESS$=STR$(MIN#)
150 PUT #1,R
160 NEXT R
170 CLOSE #1
180 END
190 ' *****
200 ' * DATA FOR MARRIED TAXPAYER TABLE *
210 ' *****
220 DATA 0,3540,0,0
230 DATA 3540,5720,0,11
240 DATA 5720,7910,239.8,12
250 DATA 7910,12390,502.6,14
260 DATA 12390,16650,1129.8,16
270 DATA 16650,21020,1811.4,18
280 DATA 21020,25600,2598.0,22
290 DATA 25600,31120,3605.6,25
300 DATA 31120,36630,4985.6,28
310 DATA 36630,47670,6528.4,33
320 DATA 47670,62450,10171.6,38
330 DATA 62450,89090,15788.42
340 DATA 89090,113860,26976.8,45
350 DATA 113860,169020,38123.3,49
360 DATA 169020,0,65151.7,50
```

Listing 2: TAXFILE.SNG

```
60 OPEN "R",#1,"TABLESNG.TAX"
70 FIELD #1,10 AS MIN$,10 AS MAX$,10 AS TAX$,10 AS PER$,10 AS EXCESS$
80 FOR R=1 TO 16
90 READ MIN#,MAX#,TAX#,PER#
100 RSET MIN$=STR$(MIN#)
110 RSET MAX$=STR$(MAX#)
120 RSET TAX$=STR$(TAX#)
130 RSET PER$=STR$(PER#)
140 RSET EXCESS$=STR$(MIN#)
150 PUT #1,R
160 NEXT R
```



```

170 CLOSE #1
180 END
190 ' *****
200 ' * TAX DATA FOR SINGLE TAXPAYER TABLE *
210 ' *****
220 DATA 0,2390,0,0
230 DATA 2390,3540,0,11
240 DATA 3540,4580,126.5,12
250 DATA 4580,6760,251.3,14
260 DATA 6760,8850,556.5,15
270 DATA 8850,11240,870.00,16
280 DATA 11240,13430,1252.40,18
290 DATA 13430,15610,1646.60,20
300 DATA 15610,18940,2082.60,23
310 DATA 18940,24460,2848.50,26
320 DATA 24460,29970,4283.70,30
330 DATA 29970,35490,5936.70,34
340 DATA 35490,43190,7813.50,38
350 DATA 43190,57550,10739.50,42
360 DATA 57550,85130,16770.70,48
370 DATA 85130,0,30009.10,50

```

Listing 3: FEDTAX.BAS

```

10 ' *****
20 ' * FEDERAL TAX PROJECTIONS *
30 ' * BY *
40 ' * JAMES W. BRYANT *
50 ' *****
60 CLS
70 DIM DA1(13)
80 DEFDBL M,T,P,E,I
90 AS="#,###,###.##"
100 LOCATE 1,31:PRINT "FEDERAL TAX CALCULATION"
110 LOCATE 3,20:PRINT " 1 - VIEW TABLE FOR MARRIED (FILING JOINTLY)"
120 LOCATE 5,20:PRINT " 2 - VIEW TABLE FOR SINGLE TAXPAYERS"
130 LOCATE 7,20:PRINT " 3 - COMPUTE TAX FOR MARRIED (FILING JOINTLY)"
140 LOCATE 9,20:PRINT " 4 - COMPUTE TAX FOR SINGLE TAXPAYERS";:INPUT (1) CH$
150 IF VAL(CH$)<1 OR VAL(CH$)>4 THEN LOCATE 9,59:PRINT SPACES(5):GOTO 140
160 ON VAL(CH$) GOTO 200,250,530,530
170 ' *****
180 ' PRINT HEADER
190 ' *****
200 CLS:FILE$="TABLEMAR.TAX":PRINT TAB(28);"(MARRIED FILING JOINTLY)":PRINT
210 PRINT "IF TAXABLE INCOME IS THEN TAX IS"
220 PRINT "-----"
230 PRINT " OVER: BUT NOT OVER: THIS PLUS THIS % OF AMOUNT"
240 GOTO 290
250 CLS:FILE$="TABLESNG.TAX":PRINT TAB(28);"(SINGLE TAXPAYERS)":PRINT
260 PRINT "IF TAXABLE INCOME IS THEN TAX IS"
270 PRINT "-----"
280 PRINT " OVER: BUT NOT OVER: THIS PLUS THIS % OF AMOUNT"
290 OPEN "R",#1,FILE$
300 FIELD #1,10 AS MIN$,10 AS MAX$,10 AS TAX$,10 AS PER$,10 AS EXCESS$

```



```

310 ' *****
320 ' GET RECORDS FROM FILE
330 ' *****
340 IF VAL(CH$)=1 THEN C=15 ELSE C=16
350 R=0
360 R=R+1
370 GET #1,R
380 ' *****
390 ' CONVERT RECORD STRINGS TO NUMERICAL DATA
400 ' *****
410 MIN=VAL(MIN$):MAX=VAL(MAX$):TAX=VAL(TAX$):PER=VAL(PER$):EXCES=VAL(EXCES$)
420 GOSUB 450
430 IF R=C THEN CLOSE #1:GOTO 500:'IF END OF FILE THEN GO ASK FOR TAXABLE INCOME
ELSE GO GET NEXT RECORD
440 GOTO 360
450 ' *****
460 ' PRINT NUMERICAL RECORDS
470 ' *****
480 PRINT USING A$;MIN,MAX,TAX,PER,EXCES
490 RETURN:'CHECK FOR END OF FILE
500 LOCATE 24,50:PRINT "CR TO CONTINUE";
510 A1$=INKEY$:IF A1$<>CHR$(13) THEN 510
520 RUN
530 CLS
540 LOCATE 1,30:PRINT "ACTUAL INCOME"
550 PRINT "*****
*****"
560 LOCATE 3,1,1:PRINT DATE$:LOCATE 3,12:PRINT "IS THIS DATE CORRECT (Y/N)";:INP
UT (1) Q$:IF Q$="" THEN 560
570 IF Q$="Y" OR Q$="y" THEN 620
580 LOCATE 4,1:PRINT "ENTER CORRECT DATE ";:INPUT DAT1$
590 IF DAT1$="" THEN LOCATE 4,1:PRINT SPACE$(80):GOTO 580
600 IF LEN(DAT1$)>=3 AND LEN(DAT1$)<=5 THEN DAT1$=DAT1$+"-1985"
610 DATE$=DAT1$:LOCATE 3,1:PRINT SPACE$(80):LOCATE 4,1:PRINT SPACE$(80)
620 MO=VAL(LEFT$(DATE$,2)):DA=VAL(MID$(DATE$,4,2)):YR=VAL(RIGHT$(DATE$,4))
630 LOCATE 3,1:PRINT "FOR PERIOD ENDING : ";DATE$;SPACE$(40)
640 LOCATE 5,9:PRINT "INCOME"
650 LOCATE 7,1:PRINT "WAGES.....";:INPUT GW
660 LOCATE 8,1:PRINT "INTEREST.....";:INPUT IR
670 LOCATE 9,1:PRINT "DIVIDENDS.....";:INPUT DI
680 LOCATE 10,1:PRINT "OTHER INCOME.....";:INPUT OT
690 LOCATE 12,5:PRINT "DEDUCTIONS"
700 LOCATE 13,1:PRINT "IRA CONTRIBUTION..";:INPUT IRA
710 LOCATE 14,1:PRINT "OTHER DEDUCTIONS..";:INPUT OD
720 DA1(0)=0
730 DA1(1)=31
740 DA1(2)=28
750 DA1(3)=31
760 DA1(4)=30
770 DA1(5)=31
780 DA1(6)=30
790 DA1(7)=31
800 DA1(8)=31
810 DA1(9)=30
820 DA1(10)=31
830 DA1(11)=30
840 DA1(12)=31
850 LOCATE 15,1:PRINT "EXEMPTIONS.....";:INPUT EX

```



```

860 FOR Z=0 TO MO
870 DAT=DAT+DA1(Z)
880 IF Z=MO-1 THEN DAT=DAT+DA:GOTO 900
890 NEXT Z
900 DED=1000*EX
910 PGW=365/DAT*GW
920 PIR=365/DAT*IR
930 PDI=365/DAT*DI
940 POT=365/DAT*OT
950 PIRA=365/DAT*IRA
960 POD=365/DAT*OD
970 GI=GW+IR+DI+OT
980 TINC=GW+IR+DI+OT-IRA-OD-DED:IF TINC<0 THEN TINC=0
990 TD=IRA+OD+DED
1000 LOCATE 19,1:PRINT "TAXABLE INC....":PRINT USING A$;TINC
1010 IF VAL(CH$)=3 THEN FILE$="TABLEMAR.TAX" ELSE FILE$="TABLESNG.TAX"
1020 OPEN "R",#1,FILE$
1030 FIELD #1,10 AS MIN$,10 AS MAX$,10 AS TAX$,10 AS PER$,10 AS EXCES$
1040 IF VAL(CH$)=3 THEN C=15 ELSE C=16
1050 R=0
1060 R=R+1
1070 GET #1,R
1080 MIN=VAL(MIN$):MAX=VAL(MAX$):TAX=VAL(TAX$):PER=VAL(PER$):EXCES=VAL(EXCES$)
1090 IF TINC=0 THEN ICTAX=0:GOTO 1140
1100 IF TINC>=MIN AND TINC<=MAX THEN 1130:'COMPARE EACH RECORD WITH INCOME
1110 IF R=C THEN CLOSE #1:GOTO 1130:'IF LAST RECORD THEN CLOSE FILE AND GO COMPU
TE TAX
1120 GOTO 1060

```

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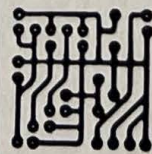
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```

1130 ICTAX=(TINC-MIN)*PER/100+TAX
1140 LOCATE 20,1:PRINT "TAX OWED.....";:PRINT USING A$;ICTAX:PRINT:PRINT
1150 LOCATE 22,1:PRINT "TAXES WITHELD....";:INPUT TW
1160 LOCATE 23,1:PRINT "EST. TAXES PAID..";:INPUT ES
1170 PTW=365/DAT*TW
1180 PES=365/DAT*ES
1190 TTWD=TW+ES
1200 OP=TTWD-ICTAX
1210 CLOSE #1
1220 CLS
1230 LOCATE 1,10:PRINT "ACTUAL INCOME":LOCATE 1,45:PRINT "PROJECTED INCOME"
1240 PRINT "*****"
*****
1250 LOCATE 1,10:PRINT "PERIOD ENDING: ";DATE$:LOCATE 1,45:PRINT "PERIOD ENDING:
";"12-31"+RIGHT$(DATE$,5)
1260 IF VAL(CH$)=3 THEN LOCATE 3,25:PRINT "MARRIED (FILING JOINTLY)" ELSE LOCATE
3,28:PRINT "SINGLE TAXPAYERS"
1270 LOCATE 5,9:PRINT "ACTUAL":LOCATE 5,45:PRINT "PROJECTED"
1280 LOCATE 7,1:PRINT "WAGES ";:PRINT USING A$;GW
1290 LOCATE 8,1:PRINT "INTEREST ";:PRINT USING A$;IR
1300 LOCATE 9,1:PRINT "DIVIDENDS ";:PRINT USING A$;DI
1310 LOCATE 10,1:PRINT "OTHER INCOME ";:PRINT USING A$;OT
1320 LOCATE 12,1:PRINT "GROSS INCOME ";:PRINT USING A$;GI
1330 LOCATE 14,5:PRINT "DEDUCTIONS"
1340 LOCATE 15,1:PRINT "IRA CONTRIBUTION ";:PRINT USING A$;IRA
1350 LOCATE 16,1:PRINT "OTHER DEDUCTIONS ";:PRINT USING A$;OD
1360 LOCATE 17,1:PRINT "EXEMPTIONS ";:PRINT USING A$;EX
1370 LOCATE 17,19:PRINT USING A$;DED
1380 LOCATE 18,1:PRINT "TOTAL DEDUCTIONS ";:PRINT USING A$;TD
1390 LOCATE 19,1:PRINT "TAXABLE INCOME ";:PRINT USING A$;TINC
1400 LOCATE 20,1:PRINT "FED INCOME TAX ";:PRINT USING A$;ICTAX:PRINT:PRINT
1410 LOCATE 22,1:PRINT "TAXES WITHELD ";:PRINT USING A$;TW
1420 LOCATE 23,1:PRINT "EST. TAXES PAID ";:PRINT USING A$;ES
1430 IF OP<0 THEN LOCATE 24,1:PRINT "TAXES YOU OWE ";:PRINT USING A$;ICTAX-T
TWD ELSE 1450
1440 GOTO 1460
1450 LOCATE 24,1:PRINT "REFUND DUE YOU ";:PRINT USING A$;OP
1460 Z$="NORMAL PROJECTION (Y/N)"
1470 LOCATE 7,40,1:PRINT Z$;:INPUT Z1$:IF Z1$="Y" OR Z1$="y" THEN LOCATE 7,40:PR
INT "WAGES ";:PRINT USING A$;PGW ELSE LOCATE 7,40:PRINT "PROJECTION
FACTOR ";:INPUT (5) PJF
1480 IF Z1$="Y" OR Z1$="y" THEN 1500
1490 GW=GW*PJF:LOCATE 7,40:PRINT "WAGES ";:PRINT USING A$;GW;:PRINT
SPACE$(10):PGW=GW
1500 LOCATE 8,40,1:PRINT Z$;:INPUT Z1$:IF Z1$="Y" OR Z1$="y" THEN LOCATE 8,40:PR
INT "INTEREST ";:PRINT USING A$;PIR ELSE LOCATE 8,40:PRINT "PROJECTION
FACTOR ";:INPUT (5) PJF
1510 IF Z1$="Y" OR Z1$="y" THEN 1530
1520 IR=IR*PJF:LOCATE 8,40:PRINT "INTEREST ";:PRINT USING A$;IR;:PRINT
SPACE$(10):PIR=IR
1530 LOCATE 9,40,1:PRINT Z$;:INPUT Z1$:IF Z1$="Y" OR Z1$="y" THEN LOCATE 9,40:PR
INT "DIVIDENDS ";:PRINT USING A$;PDI ELSE LOCATE 9,40:PRINT "PROJECTION
FACTOR ";:INPUT (5) PJF
1540 IF Z1$="Y" OR Z1$="y" THEN 1560
1550 DI=DI*PJF:LOCATE 9,40:PRINT "DIVIDENDS ";:PRINT USING A$;DI;:PRINT
SPACE$(10):PDI=DI
1560 LOCATE 10,40,1:PRINT Z$;:INPUT Z1$:IF Z1$="Y" OR Z1$="y" THEN LOCATE 10,40:
PRINT "OTHER INCOME ";:PRINT USING A$;POT ELSE LOCATE 10,40:PRINT "PROJECT

```



```

ION FACTOR          ";;INPUT (5) PJF
1570 IF Z1$="Y" OR Z1$="y" THEN 1590
1580 OT=OT*PJF:LOCATE 10,40:PRINT "OTHER INCOME          ";;PRINT USING A$;OT;;PRIN
T SPACE$(10):POT=OT
1590 PGI=PGW+PIR+PDI+POT
1600 LOCATE 12,40:PRINT "GROSS INCOME          ";;PRINT USING A$;PGI
1610 LOCATE 14,45:PRINT "      DEDUCTIONS"
1620 LOCATE 15,40,1:PRINT Z$;;INPUT Z1$:IF Z1$="Y" OR Z1$="y" THEN LOCATE 15,40:
PRINT "IRA CONTRIBUTION          ";;PRINT USING A$;PIRA ELSE LOCATE 15,40:PRINT "PROJEC
TION FACTOR          ";;INPUT (5) PJF
1630 IF Z1$="Y" OR Z1$="y" THEN 1650
1640 IRA=IRA*PJF:LOCATE 15,40:PRINT "IRA CONTRIBUTION          ";;PRINT USING A$;IRA;;P
RINT SPACE$(10):PIRA=IRA
1650 LOCATE 16,40,1:PRINT Z$;;INPUT Z1$:IF Z1$="Y" OR Z1$="y" THEN LOCATE 16,40:
PRINT "OTHER DEDUCTIONS          ";;PRINT USING A$;POD ELSE LOCATE 16,40:PRINT "PROJECT
ION FACTOR          ";;INPUT (5) PJF
1660 IF Z1$="Y" OR Z1$="y" THEN 1680
1670 OD=OD*PJF:LOCATE 16,40:PRINT "OTHER DEDUCTIONS          ";;PRINT USING A$;OD;;PRIN
T SPACE$(10):POD=OD
1680 LOCATE 17,40:PRINT "EXEMPTIONS          ";;PRINT USING A$;DED
1690 PTD=PIRA+POD+DED
1700 LOCATE 18,40:PRINT "TOTAL DEDUCTIONS          ";;PRINT USING A$;PTD
1710 PINC=PGI-PTD:IF PINC<0 THEN PINC=0
1720 LOCATE 19,40:PRINT "TAXABLE INCOME          ";;PRINT USING A$;PINC:INC=PINC
1730 IF VAL(CH$)=3 THEN FILE$="TABLEMAR.TAX" ELSE FILE$="TABLESNG.TAX"
1740 OPEN "R",#1,FILE$
1750 FIELD #1,10 AS MIN$,10 AS MAX$,10 AS TAX$,10 AS PER$,10 AS EXCESS$
1760 IF VAL(CH$)=3 THEN C=15
1770 IF VAL(CH$)=4 THEN C=16
1780 R=0
1790 R=R+1
1800 GET #1,R
1810 MIN=VAL(MIN$):MAX=VAL(MAX$):TAX=VAL(TAX$):PER=VAL(PER$):EXCES=VAL(EXCESS$)
1820 IF INC<0 THEN INC=0:ICTAX=0:CLOSE:GOTO 1880
1830 IF INC>=MIN AND INC<=MAX THEN 1860:'COMPARE EACH RECORD WITH INCOME
1840 IF R=C THEN CLOSE #1:GOTO 1860:'IF LAST RECORD THEN CLOSE FILE AND GO COMPU
TE TAX
1850 GOTO 1790
1860 ICTAX=(INC-MIN)*PER/100+TAX
1870 LOCATE 20,40:PRINT "FED INCOME TAX          ";;PRINT USING A$;ICTAX
1880 LOCATE 22,40:PRINT "TAXES WITHELD          ";;PRINT USING A$;PTW
1890 LOCATE 23,40,1:PRINT Z$;;INPUT Z1$:IF Z1$="Y" OR Z1$="y" THEN LOCATE 23,40:
PRINT "EST. TAXES PAID          ";;PRINT USING A$;PES ELSE LOCATE 23,40:PRINT "PROJECT
ION FACTOR          ";;INPUT (5) PJF
1900 IF Z1$="Y" OR Z1$="y" THEN 1920
1910 ES=ES*PJF:LOCATE 23,40:PRINT "EST. TAXES PAID          ";;PRINT USING A$;ES;;PRIN
T SPACE$(10):PES=ES
1920 OP=PTW+PES-ICTAX
1930 IF OP<0 THEN LOCATE 24,40:PRINT "TAXES YOU OWE          ";;PRINT USING A$;ICTAX
-PTW ELSE 1950
1940 GOTO 1960
1950 LOCATE 24,40:PRINT "REFUND DUE YOU          ";;PRINT USING A$;OP
1960 CLOSE #1
1970 LOCATE 25,25:PRINT "<1 - START OVER> <2 - END>";
1980 A1$=INKEY$
1990 IF A1$="" THEN 1980
2000 IF A1$="1" THEN RUN
2010 IF A1$="2" THEN END ELSE 1980

```


It's the holiday gift season and time to tell Aunt Millie which **MichTron** program you'd like to receive. (Or time to decide which ones you'll buy yourself if anyone gives you cash!) Pick from the largest selection of Sanyo software any company offers. All programs run on the Sanyo 550 series; those listed in boldface also run on the Sanyo 700 and 800 series and other IBM-compatible computers.

For everyone:

BBS (\$99.95) - bulletin-board system for your Sanyo.
Cornerman (\$39.95) - sidekick for your Sanyo has calendar, notepad, calculator, dialer, even an ASCII table.
DI (\$24.95) - advanced directory system sorts all files, even in subdirectories or on hard disks. Locates any file instantly.
M-Disk (\$34.95) - classic RAM disk emulator makes your Sanyo super-fast at any disk-addressing operation.
Mi-Key (\$34.95) - a key-change program. Type long strings with two or three keystrokes, or try out the Dvorak keyboard.
Mi-Term (\$79.95) - terminal communication program helps your Sanyo talk to virtually any other computer system.
Mousetick (\$34.95) - trick to make a joystick act like a mouse.
Printer Helper (\$29.95) - controller helps Epson printers use their full range of features with your Sanyo.
Soft Spool (\$34.95) - software print buffer and spooler keeps your computer working while the printer chugs along.
Solar Sim (\$29.95) - educational solar simulation lets you estimate whether solar power is right for your home.
SuperDirectory (\$39.95) - cataloger keeps track of all files on all your disks. Sorts, prints disk labels, more.
Type Right (\$29.95) - training program makes you a faster, more accurate typist, helps prevent frustrating typos.

For businessmen:

Business Agreements (\$49.95) - attorney-prepared legal forms and contracts simplify your business needs.
Calendar (\$24.95) - appointment book brings order to your busy life at work or at home.
MasterGraph III (\$89.95) - business graphics package creates dramatic line, bar and pie graphs.
Mi-Mail (\$79.95) - menu-driven business mailing system creates mailing labels, even a personal phone book.
Personal Money Manager (\$49.95) - home financial program keeps track of your budget, projects fixed expenses.
Pledge (\$199.95) - tracks pledges and special gifts to religious institutions, reports to givers and the treasurer.
Quick and Simple (\$49.95) - menu-driven, down-to-earth list manager features easy input, several output options.

For graphics artists:

Grafiti (\$39.95) - an easy-to-use, basic drawing program.
Picasso (\$99.95) - menu-driven, advanced free-form drawing package gives you absolute control of graphics.
FreezeFrame (\$39.95) - versatile screen dump utility can be customized to take full advantage of your printer.

For programmers:

Drive Timer Plus (\$24.95) - utility checks disk drives, encodes files and provides menu-driven DOS file commands.
DS DOS Plus 2.11 (\$49.95) - MS-DOS enhancement package supports 80-track drives, IBM graphics, sorted directories.
EasyRecord (\$199.95) - C-programmer's file utility manipulates files of all data types with easy-to-use functions.
EasyWindow (\$199.95) - screen display manager makes custom windows easy from C-language programs.
Graphpac (\$49.95) - package of graphics routines for Pascal, C and machine language programs.
Super Zap (\$49.95) - full-featured disk editor lets you change anything anywhere on a disk. Fix disk errors with ease.
Transfer (\$59.95) - data transfer program converts TRS-80 files to MS-DOS files, or vice-versa.

For gamers:

Text adventure games:

Adventure Disk #2 and **Adventure Disk #3** (\$34.95 each) - five unique games on each disk.

Arcade games:

Cashman (\$34.95) - take the money and run!
Demon Seed (\$34.95) - first bats, then demons to defeat.
Major Motion (\$29.95) - save the weapons van from attack.
Maz (\$24.95) - find your way through the maze without being eaten by the prowling cat.
Mudpies (\$34.95) - throw them at angry circus clowns, duck the clowns and their Indian clubs.
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FlipSide (\$34.95) - try Reversi against live or computer foes.
King Arthur (\$24.95) - your foresight and strategy could save Britain from invading Anglo-Saxons and Jutes..
Solitaire (\$34.95) - and cribbage and blackjack and poker squares and klondike. Many hours of entertainment.
Tic Tac Toe and Cryptogram (\$29.95) - two classics.

MichTron

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ASK SANYO

The following questions have been answered, as a service to SOFT SECTOR readers, by personnel at Sanyo Business Systems Corp. Should you have a question, mail it to: 51 Joseph Street, Moonachie, NJ 07074.

Q. In the June issue of SOFT SECTOR, "Letters to the Editor," Mr. John Kely made reference to the jumper settings of his TEAC FD-55 and how to get the drive lights to indicate which drive was active. Having been accustomed to this drive light configuration on my old TRS-80 Model I, I would like to see the same thing on my new Sanyo 555-2. However, I seem to have FD-54B drives, which have considerably different jumper labels. They are: IU, DS3, DS2, HM, DS1, DS0 and HS. The only jumpers they came with are on the drive select position and the HS position. Can you tell me what these jumpers (other than the obvious drive selects) do, and if I may achieve the same results by some other jumper (perhaps the IU setting)?

My Sanyo's clock seems to run fast. If I set the time on power up and check it from the computer later, it will display a much later time than is accurate. To verify this, I compared the clock displayed on my Sanyo with the National Bureau of Standard's clock, on radio station WWV (tuned in at 10 MHz), and found the Sanyo to gain approximately seven seconds per minute. What can I do to make my Sanyo keep accurate time?

Lawrence W. Gill
Berlin Heights, OH

Q. I have looked for a long time for just such a magazine as this and, by accident (almost), a computer store in Oklahoma City had the current October issue and several back issues. Needless to say, I have been pouring over them like chocolate on vanilla ice cream!

One of the questions I have for Sanyo is why the internal clock does not keep accurate time. I had noticed that when I set it correctly at the beginning of my "day" it would always be fast when only an hour or two had passed. Sanyo's response was "The internal clock is not designed to be an accurate timepiece. There are no changes or updates to make the clock more accurate than it presently is." What is the purpose of the clock if it isn't to keep "accurate" time?

Thank you again for your fine magazine. Keep up the good work.

Julian Sleeper
Warsaw, IN

A. The pins labeled DS0, DS1, DS2 and DS3 are the drive select pins. If DS0 is jumpered, then that drive is considered to be the first or 'A' drive. Normally on a two drive system, the 'A' drive has DS0 jumpered and the 'B' drive has DS1 jumpered. On IBM-compatible systems, such as the MBC-775/

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FastStar

FastStar makes WordStar go fast
on Sanyo MBC-55X computers.

Are you disappointed with how slow WordStar is on your Sanyo? FastStar triples the speed of WordStar's screen output on Sanyo MBC-550/555 computers (monochrome mode). FastStar now works in color too, and still speeds up WordStar's screen output by a factor of 2½. No kidding! FastStar should not be confused with patches that only speed up scrolling (such as WizStar), since FastStar speeds up all of WordStar's screen output. FastStar does this by substituting highly optimized screen output routines for the slow operating system routines that WordStar normally uses.

FastStar works with all DOS's and with WizStar. FastStar automatically recognizes if you are using the IBM compatible video board, and adjusts to speed up WordStar even more dramatically. FastStar is easy to install and use. FastStar also provides help to conveniently use a ramdisk to even further increase WordStar's performance. Ramdisk software for MS-DOS 2.11 is included, or you can use another ramdisk with either MS-DOS 1.25 or 2.11.

If you use WordStar on the Sanyo MBC-550/555, then FastStar can make a big difference for you.

FastStar costs only \$20.00, including postage. To order send check or money order to:

PT Software
149-C Overmount Ave
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885/675, both drives are selected as the second drive and have DS1 jumpered. The drives are differentiated by altering the cable configuration so that the drive select lines from the disk controller go to different pins on the floppy drive.

If the HS pins are jumpered, then the head is loaded when the drive is selected. The HM signal causes the head to be loaded when the motor is on.

The clock is controlled by the 8253 counter/timer chip. It issues interrupts at set intervals which change the MS-DOS time function. Unfortunately, on the MBC-555 all interrupts are turned off during disk access, so it is really very difficult to maintain the correct time on the MBC-555 series. If you wish to experiment, you may change the clock cycle on Clock 1 of this chip.

A small assembly language program to do this is as follows:

```
MOV AL, 74H ;Counter 1, 2 Byte Time Value, Mode 2,
              Binary
OUT 26H, AL ;8253 Control Port
MOV AX, XXXX ;Timing Values
OUT 22H, AL ;Send LSB of Time Constant
XCHG AH, AL ;Put MSB in AL
OUT 22H, AL ;Send MSB of Time Constant
```

As set by the operating system, the value of XXXX is EAG0H. To increase the number of interrupts per second (and speed up the clock), use a larger value. To slow down the clock, use a smaller value. Please remember, however, that even if you get the precise value to maintain an accurate clock, the clock will be turned off during disk access, thus giving you an incorrect value.

Q. *I have a Sanyo MBC-555 (single-sided, dual drive with MS-DOS 1.25). I would like to run some of the programs that are available for the IBM machines. Could you, or one of your colleagues, send me the necessary information to update my Sanyo?*

I have read every issue of SOFT SECTOR and enjoy having a publication that caters to my interest. Now that I am retired, I will have more time to try out the various programs that appear in the pages of this fine magazine.

*Aaron Herman
Lakehurst, NJ*

A. The MBC-550 is not really an IBM-compatible computer. There are some BIOS calls that emulate IBM PC functions and the Sanyo can read IBM disks. With the video board installed, programs that directly address the IBM video RAM have a chance of running on the MBC-550. Also, Sanyo's version of GW-BASIC will run most IBM BASIC software.

If you wish to read double-sided disks, you must upgrade your computer with double-sided drives. MS-DOS 2.11 may then be purchased from Sanyo to take advantage of the increased capacity.

Q. *From whom and for how much can I get GW-BASIC? I understand that with it I can run some IBM programs (no graphics).*

*Ed Neitzel
Oxnard, CA*

A. In order to run GW-BASIC on the MBC-555, you need double-sided drives and the Video Card. The operating system for the Video Card and GW-BASIC are included on a disk when you buy the Video Card.

Q. *I have been experiencing many operating difficulties with my the keyboard of my MBC-555.*

It has been repaired twice and the expert technician who did the work told me that the type of switch this keyboard has is not easy to repair or to change, as in other keyboards he has fixed having other types of switches.

Therefore, I would appreciate your comments on this subject and would like to know if you know of any other keyboards of better quality that are compatible with the Sanyo MBC-555 (MS-DOS v.2.11).

If you know of one, please let me know the manufacturer, model number and any other information required to order one.

*Luis A. Rubio, E.E.
Miami, FL*

A. Sanyo computers are warranted for 90 days. If you can prove that repairs were attempted within this time and completed unsatisfactorily by an authorized Sanyo repair center, your claim for service may be honored. If the warranty period is over, Sanyo Business Systems will be able to repair the keyboard for a parts/labor charge.

As far as we know, there are no other keyboards that will work with the MBC-555 series.

Chicago Sanyo Owners

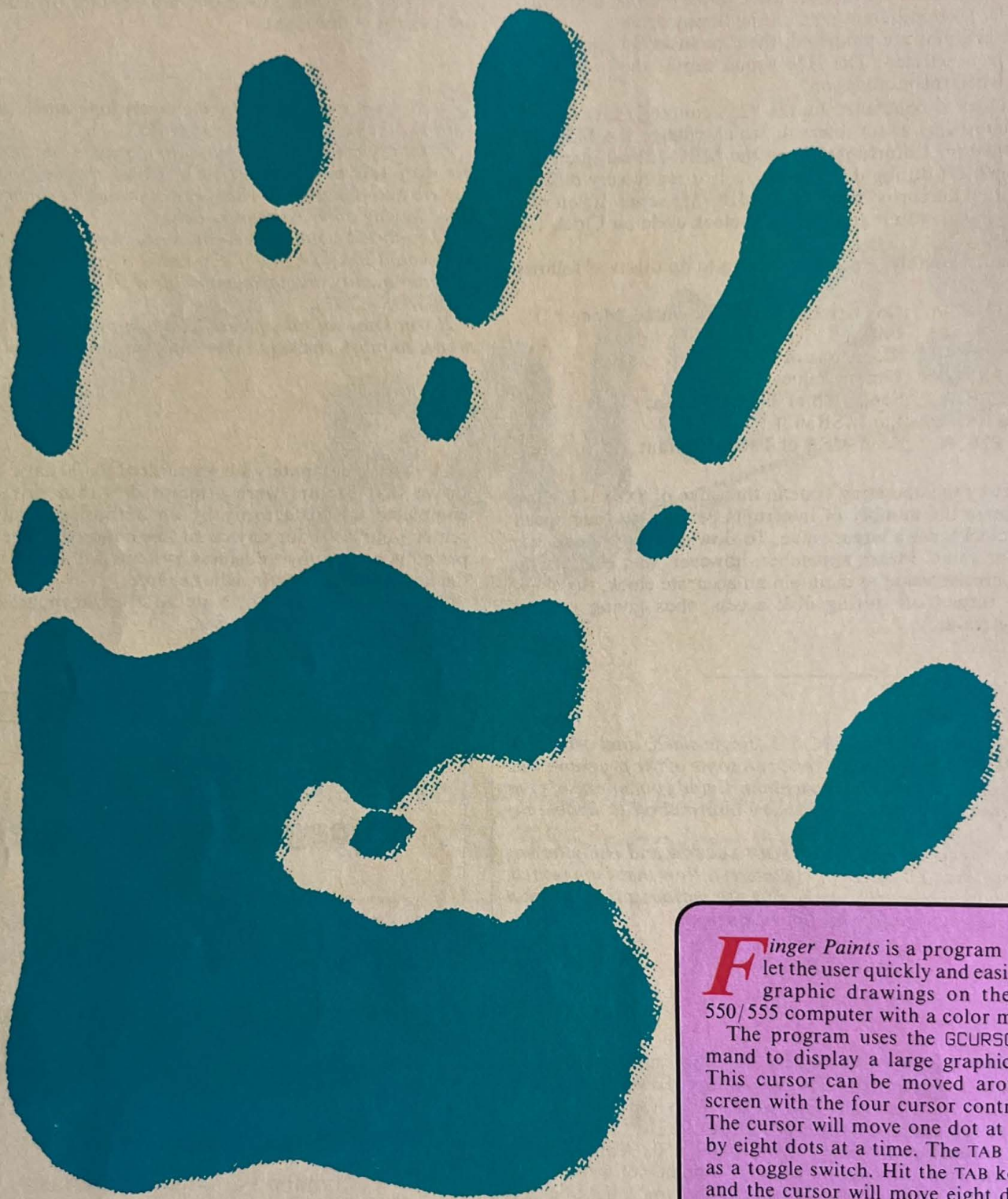
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By Charles A. Quante

Finger Paints is a program that will let the user quickly and easily create graphic drawings on the Sanyo 550/555 computer with a color monitor.

The program uses the GCURSOR command to display a large graphic cursor. This cursor can be moved around the screen with the four cursor control keys. The cursor will move one dot at a time, or by eight dots at a time. The TAB key acts as a toggle switch. Hit the TAB key once, and the cursor will move eight dots at a time. Hit it again, and it will move one dot at a time. The cursor has full wrap-around ability. If you move off the top of the

(Charles Quante works for AT&T in the billing department. Charles began computing with a TRS-80 Model I and has written various programs for resale and personal use. He has been using a Sanyo for approximately a year and may be contacted at 1804 S. 19th, Tacoma, WA 98405; 206-272-9251.)

FINGER PAINTS

*Quickly and easily create graphics
drawings on your 550/555's color monitor*

screen, it will wrap back around to the bottom of the screen.

There are five options available when using the program. They are "Line," "Circle," "Box," "Paint" and "Switch Colors." These options are printed as a one-line menu at the bottom of the screen, along with the current border color and current paint color.

All options are available by pressing the appropriate PF key. An additional option is the "Dot" option. This is available by pressing RETURN twice. This command will light one dot using the border color.

The border and paint colors are small graphic blocks in the lower left-hand corner of the screen. There is a 'B' in the center of the block which represents the border color, and a 'P' in the center of the paint color.

The paint color is the color that will be used when the "Paint" option is used. The paint option will paint an area stopping only when it reaches a line drawn with the border color. The border color is used

when drawing all figures such as lines, boxes and circles.

To use the line option, center the cursor at the point the line should begin. Press PF1, and the word "line" in the menu should turn red. Next, move the cursor to the point the line should end. Press PF1 once more, and a line should be drawn from the first point to the second. The word "line" will then return to black.

The circle option is quite similar to the line option. Center the cursor at the point the center of the circle should be. Press PF2 and the word "circle" will turn red. Move the cursor to another point some distance from the first. This will be the radius of the circle. Press PF2 and a circle will be drawn on the screen.

The box option also requires two points. Move the cursor to the location at which one corner of the box should appear and press PF3. Now move the cursor to a point that is diagonal from the first and press PF3. A box will be drawn. If you choose a point that is in direct line

with the first point, a line will be drawn instead of the desired box.

To use the paint option, move the cursor inside the area that will be painted. Press PF4 and the area will be painted in the current paint color, and will stop painting at the current border color.

The final option lets the user select either the border or the paint option. Press PF5 and the one-line menu will be replaced with another. The new menu will show the border and paint graphic blocks, plus eight other graphic blocks showing the available colors. One of the borders or paint blocks will be a solid block with no letter visible. The block that does have a letter visible will be the color that will be changed. For example, if the border block is a solid block, the new color chosen will replace the current paint color.

SHIFT-PF5 is a toggle switch to choose between changing the border color or the paint color. Once the right one is selected, press one of the number keys (zero through seven) to change the color.

The listing: PAINTER.BAS

```
10 LOCATE 1,1,0
20 DEFINT A-Z: GOSUB 6000: COLOR 0,7: CLS: FOR I=1 TO 4: KEY I,"": KEY I,CHR$(13)
)+ " "+CHR$(I+48): NEXT I: KEY 5,"": KEY 5,CHR$(13)+" *"
30 KEY 10,"*"
40 C$="1234*"
50 C1$="*01234567"
60 X=320:Y=100:PC=4:BC=1
70 COLOR 7: LOCATE 25,1: PRINT STRING$(79,"[");
80 COLOR PC: LOCATE 25,1: PRINT"[P^[ ";: COLOR BC: PRINT"[B^[ ";
90 LINE (0,188)-(639,188),BC
100 COLOR 0,7: LOCATE 25,16: PRINT"[1] LINE. [2] CIRCLE. [3] BOX. [4] PAINT.
[5] SWITCH COLORS.";
110 GCURSOR (X,Y),(X,Y),4
120 PSET (X,Y),BC
130 G$= INKEY$: IF G$="" THEN 130
140 C= INSTR(C$,G$): IF C=0 THEN 110
150 C1=C
160 ON C GOSUB 1000,2000,3000,4000,5000
170 IF C1=5 THEN 70
180 LINE (0,188)-(639,188),BC
190 GOTO 110
1000 REM THIS IS THE LINE SUBROUTINE. IT WILL DRAW A LINE FROM
1010 REM X1,Y1 TO X,Y USING THE COLOR DETERMINED BY BC.
1020 REM
1030 IF Y>184 THEN RETURN
1040 IF FLAG=0 THEN X1=X:Y1=Y:FLAG=1: LOCATE 25,20,0: COLOR 4: PRINT"LINE.";: RE
TURN
1050 LINE (X1,Y1)-(X,Y),BC:FLAG=0: LOCATE 25,20,0: COLOR 0: PRINT"LINE.";: RETUR
N
2000 REM THIS IS THE CIRCLE DRAWING ROUTINE. IT WILL DRAW A CIRCLE
2010 REM USING X1,Y1 AS IT'S CENTER, R AS IT'S RADIUS, AND BC AS IT'S
2020 REM BORDER COLOR.
2030 REM
2040 IF Y>184 THEN RETURN
2050 IF FLAG=0 THEN FLAG=1:X1=X:Y1=Y: LOCATE 25,31,0: COLOR 4: PRINT"CIRCLE.";:
RETURN
```

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```

2060 R1= ABS(X1-X): R2= ABS(Y1-Y)
2070 IF R1>R2 THEN R=R1 ELSE R= INT(ABS(R2*1.94))
2080 CIRCLE (X1,Y1),R,,,,BC
2090 LOCATE 25,31,0: COLOR 0: PRINT"CIRCLE.";: FLAG=0: RETURN
3000 REM THIS IS THE BOX DRAWING ROUTINE. IT WILL DRAW A BOX USING
3010 REM X1,Y1 AS ONE CORNER, AND X,Y AS THE OPPOSITE. THE BOX WILL BE
3020 REM DRAWN USING COLOR BC.
3030 REM
3040 IF Y>184 THEN RETURN
3050 IF FLAG=0 THEN FLAG=1:X1=X:Y1=Y: LOCATE 25,44,0: COLOR 4: PRINT"BOX.";: RET
URN
3060 LINE (X1,Y1)-(X,Y),BC,B:FLAG=0: LOCATE 25,44,0: COLOR 0: PRINT"BOX.";: RETU
RN
4000 REM THIS IS THE PAINT ROUTINE. THIS ROUTINE WILL PAINT AN AREA USING
4010 REM THE COLOR OF PC UNTIL IT REACHES THE BORDER COLOR OF BC.
4020 REM
4030 IF Y>184 THEN RETURN
4040 LOCATE 25,54,0: COLOR 4: PRINT"PAINT.";
4050 RC= RND*7: IF RC=PC OR RC=BC THEN 4050
4060 PSET(X,Y),RC
4070 PAINT (X,Y),PC,BC
4080 LOCATE 25,54,0: COLOR 0: PRINT"PAINT.";: RETURN
5000 REM THIS IS THE COLOR SELECTING ROUTINE. THIS ROUTINE WILL ALLOW
5010 REM THE USER TO CHOOSE EITHER THE BORDER COLOR, (BC), OR THE PAINTING
5020 REM COLOR. THE PF5 KEY IS A TOGGLE SWITCH TO SWITCH BETWEEN BORDER
5030 REM AND PAINT. ONCE THE RIGHT ONE IS CHOSEN, THEN HIT ONE OF THE
5040 REM SEVEN NUMBER KEYS TO CHOOSE THAT COLOR.
5050 REM
5060 LOCATE 25,1,0: COLOR 7: PRINT STRING$(79,"(");: LOCATE 25,1,0
5070 COLOR PC: PRINT"[P^[ ";: COLOR BC: PRINT"[B^[ ";
5080 GOSUB 5170
5090 LOCATE 25,17,0: FOR I =0 TO 7
5100 COLOR 0: PRINT" 3";: COLOR I: PRINT"[ ";:COLOR 0: PRINT CHR$(I+48);: COLOR
I: PRINT"[ ";: COLOR 0: PRINT"3 ";
5110 NEXT I
5120 G$= INKEY$: IF G$="" THEN 5120
5130 C= INSTR (C1$,G$): IF C=0 THEN 5120
5140 IF C=1 THEN GOSUB 5160: GOTO 5120
5150 GOSUB 5190: RETURN
5160 TF=TF+1: IF TF>1 THEN TF=0
5170 IF TF=0 THEN LOCATE 25,1,0: COLOR PC: PRINT"[[[[[ ";: COLOR BC:PRINT"[B^[ "
;: RETURN
5180 LOCATE 25,1,0: COLOR PC: PRINT "[P^[ ";: COLOR BC: PRINT"[[[[[ ";: RETURN
5190 IF TF=0 THEN BC=C-2 ELSE PC=C-2
5200 RETURN
6000 LOCATE 1,1,0: COLOR 6,0:CLS
6010 N$="FINGER PAINTS!"
6020 FOR J = 1 TO 10
6030 FOR I = 1 TO LEN (N$)
6040 R= INT(RND*8): IF R=0 OR R=R1 THEN 6040
6050 R1=R
6060 SYMBOL ((I*40),50),MID$(N$,I,1),5,3,R
6070 NEXT I
6080 NEXT J
6090 SYMBOL(175,85),"{C} Copyright 1984",2,3,6
6100 SYMBOL(300,115),"By",2,3,6
6110 SYMBOL (185,145),"Charles A. Quante",2,3,6
6120 FOR I=1 TO 3000: NEXT I: RETURN

```



Transferring BASIC Programs to the Sanyo MBC 550/555

By Fred Blechman
Soft Sector Contributing Editor

There are literally thousands of programs written in BASIC for microcomputers. Most are written in a version of Microsoft BASIC, such as IBM-PC BASIC, TRS-80 BASIC (various models) and Sanyo BASIC. Even other BASICs, such as those for Timex Sinclair, Commodore and Texas Instruments, bear enough resemblance to Microsoft BASIC — and each other — that translations from one version to another are possible.

The first problem, however, is getting the original BASIC into the "target" computer's memory so you can make the changes in syntax and "keywords" to allow the target computer to run the program. Of course, you can always enter the program, character-by-character, using the target computer's keyboard, if you have the BASIC program listing. This is tedious and subject to many errors that make translation far more difficult.

A previous article ("The Dialectic Difference," August 1984) discussed using ASCII files or Compaq BASICA to get BASIC programs into your Sanyo 550/555's memory. This article will discuss two other methods:

- 1) Computer-to-computer transfer, using the communications capabilities of both the source and target computers.
- 2) Software transfer programs.

Computer-To-Computer Transfer

The transmission of data and messages using mainframe and minicomputers (telecommunications) is old news, but has only come into its own in the microcomputer world in the last few years. Large database services, such as Delphi, CompuServe and The Source, allow users of virtually any micro, with the proper communications software and a "modem," to link together through telephone lines. They can communicate in real time, leave messages, retrieve messages, or transfer files (called "uploading" and "downloading").

It turns out to be pretty simple to transfer programs in this manner if you have the proper equipment. If the source and target computers are physically near each other, you can use a simple cable between the two. If they are not near each other, a telephone line and a modem is used.

TRS-80 to Sanyo MBC-555

For the sake of illustration, we'll assume you wish to transfer a BASIC program from a TRS-80 Model III disk system to your Sanyo MBC-555. While this example will discuss the specifics of transferring data between these two computers, the general approach can be used with just about any combination of microcomputers.

The Equipment

Each computer will need a "terminal

program," also frequently referred to as a "communications program." Furthermore, you'll need a "smart" terminal or communications program, one that can "upload" or "download" (send or receive) programs either directly from disk, or from a memory storage area called "the buffer."

It's best if the terminal program supports the "Christensen protocol," also known as the Xmodem, Modem7, or CP/M protocol. This method of transferring files, using verified blocks of 128 bytes, virtually assures error-free transfer.

If the units are not near enough to each other to be cabled directly together, each computer will need a modem connected to a telephone line. In any case, you'll need to have an RS-232 interface installed in each computer.

While all this sounds like a lot of extra equipment or software, the fact is the RS-232 interface, the modem and sophisticated communications software are all becoming very common in the micro world. Several sources, including Sanyo, offer the RS-232 interface for the 555. Modems for use with any RS-232 interface are available from dozens of manufacturers. Many communications programs for the 555 are available. (Look through the ads in this magazine for modems and terminal programs.)

As for the TRS-80 Model III, RS-232 interfaces are usually included with the computer or are available separately. Many smart communication programs for the TRS-80 Model III are available, since this microcomputer has been around for over three years.

Similarly, most common microcomputers have RS-232 interfaces and commu-

(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners. Fred may be contacted at 7217 Bernadine Ave., Canoga Park, CA 91307; 818-346-7024.)

communications programs readily available. Therefore, getting the equipment should not be a problem. However, plan on spending some time getting acquainted with the operation of this equipment. Each comes with documentation describing its particular features and operation, and it seems no two are the same!

The Computer Connection

Books have been written on the subject of telecommunications so it would be presumptuous for me to attempt to cover this subject in detail in this short article. For the subject at hand (transferring programs from the TRS-80 Model III to the Sanyo MBC-555) I'm going to assume you have a modem, an RS-232 interface and terminal program at each computer, and you have some idea of how to use them. They would be connected as shown in Figure 1. I'm further going to assume that you know how to operate the modems and terminal programs, and simply review the procedure, since there are some factors easily overlooked.

Hard-Wire Connection

Actually, you can eliminate the phone lines and both modems by making a direct RS-232-to-RS-232 connection, as shown in Figure 2. This works better, in most cases, than using modems, and simplifies the procedure. Also, transfers at higher rates — such as 9600 Baud — are practical if the terminal programs can handle that rate.

Preparation

Before you get involved with your communication link, first determine what program you want to transfer and establish the target computer. The most important thing to realize is that the transmitted file, whether it be a BASIC program or a data file, must be in ASCII format when transmitted.

Since BASIC programs are normally saved in "binary" (also called "tokenized" or "compressed") format, you must first change that BASIC file to an ASCII format. You do this by loading the program into your BASIC memory, and then saving it with the filename followed by a comma and an 'A'.

For example, ORDER/BAS on a TRS-80 would be loaded with the LOAD"ORDER/BAS" command, then could be saved with the SAVE"ORDER/ASC",A command. The "extension," /ASC, could actually be any three-letter code, but this is the one most commonly used to designate that the file is in ASCII format to distinguish it from the /BAS binary file. The comma and A after the filename tell the computer to save this program in ASCII format. This is very important!

Matching Baud Rates

Next, it is extremely important that the

"Baud" rates (the speed of transmission) and the "word format" (signal sequence) be the same at both the transmitting and receiving ends of the telecommunications link. This is merely a matter of using whatever commands are required in the terminal program to set the Baud rate (usually 300 or 1200), and word format (usually 8 bits, one stop bit and no parity.) There should be no problem communicating at 1200 Baud over the phone lines, but use 300 if a lot of errors interrupt the program transfer.

Step-By-Step

Probably the best way to describe the procedure of transferring a program is to "walk" you through an actual example. Remember, you would follow a similar procedure with another computer. My illustration will be based on an actual need.

My "AMBIZ-PAK '86" (tm) of programs for Amway Product Distributors has hundreds of users on the TRS-80 Models III, 4 and 4P, as well as the Sanyo MBC-555, the IBM-PC, and all the various compatibles. Whenever the Amway Corporation changes prices for the hundreds of products carried by distributors, I issue an update to my *Order Generate/Verify Program*, one of the ten programs in the package.

I make these changes on my TRS-80 version of the program, where 270 data statements, held within the BASIC program, are corrected from the keyboard to show new pricing information for over 400 products. Although making these data changes takes about five hours of work, I can then save the program and make copies for TRS-80 users. But what about the other versions of the program — specifically, the IBM-PC and Sanyo 555 versions?

I could, of course, go through the same tedious keyboard changes on each version. Instead, using the techniques I'll describe, I merely transfer the DATA statements from the TRS-80 Model III to the Sanyo and save all that typing! Using the Sanyo, I can even modify the IBM-PC version, and then it's simply a matter of using the DISKCOPY command to turn out distribution diskettes of either version.

Also, in the process of writing programs for my Sanyo 555 book, it was much easier to transfer programs I had already written for the Model III, and then make the syntactical changes as compared to having to type them into the Sanyo keyboard one character at a time.

To make an AMBIZ-PAK update, I loaded the program that contained the pricing DATA statements into the TRS-80 Model III memory. Next I deleted the program itself, leaving only the DATA statements, since that's all I wanted to transfer. Then I saved the data in ASCII with the SAVE"DATA/ASC",A command.

Terminal Programs

Now that I had the program I wanted to transfer in ASCII, I needed to get the terminal programs up and running on both computers. I used *OmniTerm* on the TRS-80 Model III, and *SanyCom* on the Sanyo MBC-555. I used a direct cable connection between the two computers (Figure 2), but the procedure to make the transfer would be the same with modems, except for the additional task of setting the modems (either one of the two to "originate", the other to "answer"). Making the phone call from one to another would establish the link. The Baud rate selected must match the modems — typically 300 Baud, or 1200 Baud with more expensive modems.

Setting The Parameters

With *OmniTerm* running on the Model III, I used the various menus to set the Baud rate at 1200 Baud. Using *SanyCom* on the Sanyo, I selected the high Baud rate of 1200 to match *OmniTerm*. Actually, the *SanyCom* Baud rate could be changed to rates other than 300 or 1200 with its *Install* program, but it really wasn't necessary — 1200 Baud effectively turns out to be about 120 characters a second! The "default" word format was already set to 8 bits, 1 stop bit and no parity in both terminal programs, so that required no changing.

File Transfer

Next, I selected the *OmniTerm* "File Transfer" command, and when *OmniTerm* asked me for the filename to be sent, I typed DATA/ASC (but I did not hit the ENTER key yet).

I went to the Sanyo and selected the "Receive CP/M File" mode from the screen menu. (The CP/M term is a tipoff to this program's genesis.) I typed R DATA.ASC and hit RETURN. I immediately went back to the Model III and pressed ENTER. It was a pleasure to watch the screens as the program zipped over the cable, with confirmation messages at each end as each block of 128 characters was transmitted and verified. In a short time, each screen indicated the transfer was completed successfully!

Software Transfer

Leave it to professional programmers to find "a better way," and eliminate interfacing, terminal programs, modems, phone lines and cables altogether! *Transfer*, a program from MichTron, looked like it might be a better solution to my problem of getting data from my TRS-80 Model III to a disk readable by the Sanyo. While the cable transfer method just described did work, *Transfer* could be used without the extra equipment. Actually, I found it less expensive and

simpler, and it offered another very important advantage in program translation — “keyword spacing.” I’ll explain that shortly.

MichTron’s Transfer

Transfer allows you, using a two-drive TRS-80 Model I/III/4/4P, to make a single-sided IBM-PC formatted diskette, which is directly readable by the Sanyo 555 (and other MS-DOS computers). It then makes a copy of any TRS-80 Model I/III/4/4P ASCII file directly onto the IBM diskette.

You then simply use this IBM diskette to load the program into your IBM-PC, Sanyo or compatible, then make the necessary syntax and keyword changes to conform to the target computer’s BASIC interpreter. It also allows you to transfer IBM-PC, Sanyo, etc., disk files onto a TRS-80 diskette!

If you follow this, you’ll understand what a breakthrough this can be for anyone wanting to move programs between the 8-bit world of the TRS-80 and the 16-bit MS-DOS environment. But there’s more good news. It has to do with the keyword spacing mentioned earlier.

Keyword Spacing

Although it’s not generally known (except by TRS-80 owners), many TRS-80 versions of Microsoft BASIC allow memory saving by making a space optional before and after BASIC keywords. Programs can be “packed” by leaving out most spaces (except within actual text). This is fine until you try to do the same thing in Sanyo BASIC, or most other BASICs, which generate a syntax error if you leave spaces out after (and sometimes before) a keyword.

Therefore, if you simply transfer a BASIC program from the TRS-80 Model I, III, 4 or 4P and then try and run it on

the Sanyo 555 (or IBM-PC), the program will “crash” with a syntax error at the first keyword that isn’t followed by a space!

MichTron’s *Transfer* program disk also contains a program called CONV (which obviously stands for “convert”) that does several things. It takes a program saved in compressed (binary) format, scans it for all keywords, adds a space before and after each one, converts the program to ASCII format, and then saves it on the TRS-80 diskette! In other words, you’re eliminating future crashes as well as converting the program to ASCII for transferring. Even if you are planning on a cable or modem transfer, using CONV will introduce spaces where necessary as well as changing the program to the ASCII format you need before transferring.

This feature proved particularly handy in the data transfer of the pricing for my AMBIZ-PAK, since I had 270 lines of data statements, each one without the space after the word DATA. The CONV program put in all those spaces exactly where they belonged.

As an example, in transferring a friend’s very long BASIC program, which he wrote for the TRS-80 Model I, to an IBM-PC disk (so he could make the translation on his new IBM-PC), the CONV program found 1299 keywords that needed spaces! Without this program, my friend would have had to add all those spaces manually.

Using Transfer

You need to have a two-drive Model I, III, 4 or 4P TRS-80. If it’s a Model I, it must have two 40-track disk drives and a double-density board. I used a standard two-drive Model III.

Since IBM/TRS *Transfer* is supplied on a Model I diskette, I had to use the TRSDOS CONVERT program to make a Model III disk. From that time on, I used

the new disk, and only used the CONV and IBMIII programs on that new disk. Actually, detailed operating instructions come with the program, so I won’t cover the details here.

First, I used CONV to convert my DATA/BAS program. This added the spaces after every keyword and then saved the program as an ASCII file under the new name of DATA/ASC.

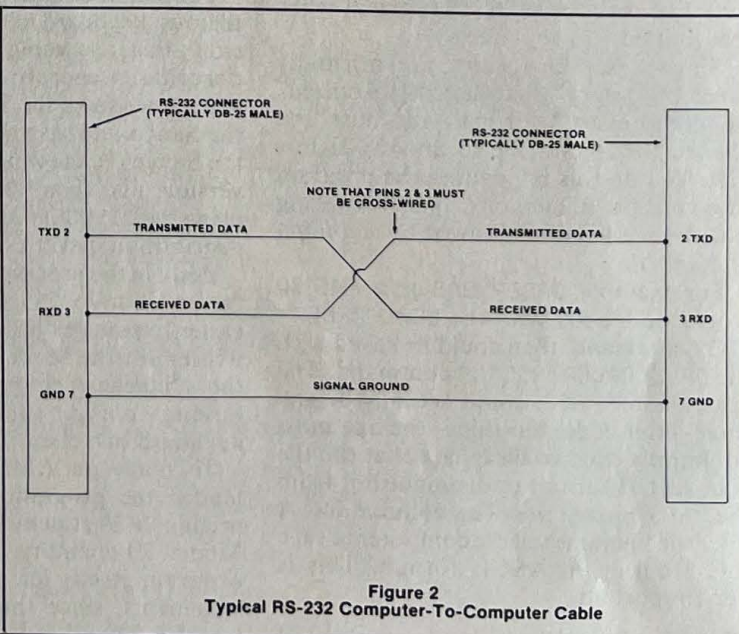
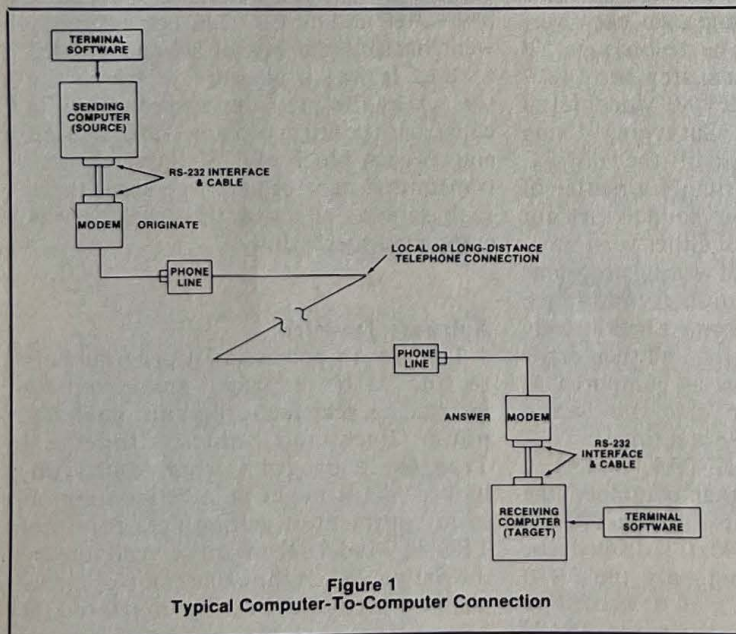
Next, I loaded the IBMIII program into memory and put a blank diskette in the upper drive. Using screen menu Item 5, I had *Transfer* format the blank diskette for an IBM-PC — 40 tracks, double-density, single-sided, but with different sector configurations than a TRS-80.

Then I selected menu Item 3 and the program displayed the TRS-80 diskette directory and asked me what file I wanted to transfer. I specified DATA/ASC. I then used the filename DATA.DAT as the destination filename, and the program copied the DATA/ASC file from the TRS-80 disk to the IBM disk.

Lo and behold, when I took the IBM disk over to my Sanyo and asked for the directory with DIR, there was DATA.DAT, in all its glory! I got into Sanyo BASIC, and LOAD “DATA.DAT” put the program in memory for any translational changes. Smooth as silk!

Summary

This article should give you insight into two powerful techniques for transferring programs between computers. Once a desired program is in the target computer, you still have to face the inevitable (and sometimes very elusive) changes that must be made to have the program run properly. Some of this was covered in “The Dialectic Difference,” referred to earlier, and more BASIC/BASICA conversion hints will be provided in a future “BASIC Training” article.



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Memo

This BASIC
program
provides
prompts to
format a
memo
onscreen,
then sends it
to your
printer for
attractive,
proportioned
printouts

Writer

By John S. Vandermeersch

*M*emo Writer is a simple BASIC program that allows you to input onscreen, a memo, and have it printed on your printer in standard memo format. The program was specifically written for use with an Epson RX-80 printer, but I'm sure it can be easily changed to suit your printer. The program uses some of the many fine graphics features of the Sanyo 550 series and is quite attractive in color. Little change is necessary for monochrome users but some of the color codes may produce very bright characters or that nasty blinking that requires you to reset the DIP switches in your computer. Play with the program a bit and see what looks best to you if you have this problem.

After typing *Memo Writer* into BASIC, hit PF4 to run it. The first thing you'll see is the sign on message. Type 'Y' to go into the instruction routine and read them carefully. They are self-explanatory and should answer most questions about the program's operation. Note, however, that *Memo Writer* allows only alphanumeric keys and will beep if any graphics or arrow keys are hit. Press any key to start the main program.

Lines 150 through 210 comprise the first routine to be executed. They ask for the addressee (who is the memo to), a reference or policy number (you can change this to suit your needs), the subject of the memo (what it's about) and, finally, the date the memo was produced. When entering these lines in BASIC, change them according to your needs. Unless you are a life insurance agent, such as myself, you probably won't want a policy number but you might need some other type of reference number. Feel free to adjust this routine to your specific needs.

Lines 220 through 330 print the heading of the memo in a formatted manner that makes everything clear to the reader as to the purpose of this memo. Substitute your own name in Line 250 where my name is listed. (I'd hate to think that thousands of memos are floating around out there, all of them with my name as author!) Note how the memo header is laid out and don't make your subject and reference numbers too long or they'll wrap around on the sheet and mess up the format.

(John S. Vandermeersch holds a B.A. in literature and has been a life insurance agent for eight years. He has owned both 8-bit and 16-bit computers and has written several programs for personal use in his agency. He may be contacted at 109 Moore Ave., Aylmer West, Ontario N5H 2Z8; 519-773-7220.)

The main body of the program is executed in lines 340 through 480. I tried to keep this code as short and as quick as possible to eliminate the possibility of losing characters should a speed typist be using this program. Not everyone hunts and pecks as I do. I tested this routine on my wife, who can type circles around me, and it kept up with her without fail. There are a number of tests executed each time a key is hit. First, is the key you hit the RETURN key? If so, a subroutine takes over and asks if this is the end of your memo. Then, an exit routine is displayed and a number of "good-bye" messages are displayed — choose one. If not, another routine at Line 490 asks if you wish to return to your last cursor position (you may have hit RETURN by mistake) or asks if you would like to start a new paragraph. Make your choice.

If RETURN was not the key hit, then was it the backspace key? Some string manipulation is required if it was, and this is taken care of in lines 390 through 400. In

this routine, one character is chopped off the end of the string holding your present line, and your cursor position is backed up by one space. This is a nondestructive backspace, and subsequent characters overwrite the characters you backed over. Be warned, however, that you cannot correct errors committed in previous lines. To keep this from becoming a full-fledged word processor, some sacrifices had to be made. So keep an eye on what you are typing and correct any errors before the line is done.

The next check performed determines whether an acceptable character has been entered. Only alphanumeric characters are allowed and a beep is heard if an unacceptable character is input. If the character is accepted, it is added to the string holding all previous characters. When this string gets up to 80 characters in length some more manipulation is required. Since you don't want to be bothered with hyphenation or trying to squeeze in extra characters, a subroutine at Line 910 is called up from Line 410. The

last space encountered in the string is found and everything after that space is printed on the next line. The screen and the altered line are sent to the printer. Finally, a check is made to determine if the screen is full. If it is, a clear screen is performed and you start a fresh screen for input.

Ending your memo is done by hitting the RETURN key and answering yes to the prompt that asks if your memo is done. A sign off routine is executed at Line 590 and a list of choices is displayed for a "good-bye" message. Pick one or change them to suit your needs. That ends your memo and your printer is reset to its default status.

I wrote this program because I hadn't seen anything like it for our computer. Also, the staff at my office was tired of trying to decipher my handwriting, so here's the result. I hope this program will be of some use to you, and I would like to thank SOFT SECTOR for providing the forum whereby we can exchange ideas about our great little computer.

The listing: MEMOWRTR.BAS

```

10 LOCATE 1,1,0
20 ON ERROR GOTO 720
30 MEMO$=""
40 CLS:LPRINT CHR$(18)
50 ME$="John Vandermeersch, B. A.":TITLE$="Memo Writer"
60 FOR X=1 TO 7
70 SYMBOL(125+(3*X),10+(X*2)),TITLE$,4,3,X:NEXT
80 SYMBOL(280,96),"By",2,2,6
90 FOR X=1 TO LEN(ME$):SYMBOL(115+(X-1)*16,150),MID$(ME$,X,1),2,2,INT(RND(1)*7)+
1:NEXT X
100 LOCATE 25,27:PRINT "DO YOU WANT INSTRUCTIONS?";
110 Q$=INKEY$:IF Q$="" THEN 110
120 IF Q$="Y" OR Q$="y" THEN 730 ELSE IF Q$="N" OR Q$="n" THEN 130 ELSE 110
130 "***** INPUT STAGE -- MEMO AND WHO TO *****"
140 CLS:LOCATE 5,1,1:COLOR 3
150 LINE INPUT "ENTER NAME OF ADDRESSEE":N$
160 LOCATE 7,1:COLOR 6
170 LINE INPUT "ENTER REFERENCE OR POLICY #":PN$
180 LOCATE 9,1:COLOR 3
190 LINE INPUT "ENTER SUBJECT OR NAME (re: this memo)":W$
200 LOCATE 11,1:COLOR 6
201 PRINT "DATE THIS MEMO PRODUCED":DATE$;" correct (Y/N)?"
202 Q$=INKEY$:IF Q$="" THEN 202 ELSE IF Q$="Y" OR Q$="y" THEN D$=DATE$:GOTO 220
ELSE IF Q$="N" OR Q$="n" THEN LOCATE 11,1:PRINT SPACE$(79):LOCATE 11,1:GOTO 210
ELSE 202
210 LINE INPUT "ENTER DATE FOR THIS MEMO (MM/DD/YY)":D$
220 LPRINT STRING$(80,"-")
230 LPRINT CHR$(15):LPRINT CHR$(27)"S0";"TO:";TAB(66)" | FROM:";
240 LPRINT CHR$(18):LPRINT CHR$(27)"T"
250 LPRINT CHR$(14):LPRINT CHR$(27)"E";" ";N$;TAB(20)" | JOHN VANDERMEERSCH";
260 LPRINT CHR$(20):LPRINT CHR$(27)"F"

```



```

270 LPRINT STRING$(80,"-")
280 LPRINT CHR$(15);:LPRINT CHR$(27)"S0";"DATE:";TAB(43)" | SUBJECT:";
290 LPRINT CHR$(18);:LPRINT CHR$(27)"T"
300 LPRINT CHR$(27)"E";"          ";D$;TAB(25);" |          ";PN$;" : ";W$;
310 LPRINT CHR$(27)"F"
320 LPRINT STRING$(80,"-")
330 LPRINT:LPRINT:LPRINT:CLS
340 I$=INKEY$:IF I$="" THEN 340
350 IF I$=CHR$(13) THEN GOSUB 490
360 IF I$=CHR$(8) THEN I$="":GOTO 390
370 IF ASC(I$)<32 OR ASC(I$)>127 THEN BEEP:GOTO 340
380 MEMO$=MEMO$+I$
390 IF I$="" THEN MEMO$=LEFT$(MEMO$,LEN(MEMO$)-1)
400 IF I$="" AND POS>1 THEN LOCATE CSRLIN,POS-1:GOTO 340
410 IF LEN(MEMO$)=80 THEN GOSUB 910:LOCATE CSRLIN,80-(80-X):PRINT SPACE$(80-X):L
PRINT MEMO$:MEMO$="":GOSUB 950
420 PRINT I$;
430 IF CSRLIN>24 THEN CLS:PRINT MEMO$;
440 GOTO 340
450 LPRINT:LPRINT:LPRINT CHR$(14);:LPRINT CHR$(27)"E";TAB(40-LEN(SINEOFF$)-8)"-="
> "SINEOFF$" <="-"
460 LPRINT STRING$(80,"-")
470 LPRINT CHR$(27)"@"
480 COLOR 2:CLS:END
490 A=POS:B=CSRLIN
500 LOCATE 25,10:COLOR 4:PRINT TAB(20)"IS THIS THE END OF YOUR MEMO (Y/N)?";
510 A$=INKEY$:IF A$="" THEN 510
520 IF A$="Y" OR A$="y" THEN LPRINT MEMO$:GOSUB 590:GOTO 450
530 IF A$="N" OR A$="n" THEN LOCATE 25,1:PRINT SPACE$(79);
540 LOCATE 25,10:PRINT "<N>EW PARAGRAPH OR <R>ETURN TO LAST CURSOR POSITION";
550 A$=INKEY$:IF A$="" THEN 550
560 IF A$="R" OR A$="r" THEN COLOR 6:LOCATE 25,1:PRINT SPACE$(79);:LOCATE B,A:RE
TURN
570 IF A$="N" OR A$="n" THEN COLOR 6:LOCATE 25,1:PRINT SPACE$(79);:LPRINT MEMO$:
LPRINT:LOCATE B+2,1:MEMO$="":RETURN
580 GOTO 550
590 CLS:LOCATE 1,1,0:Z$="CHOOSE ONE OF THE FOLLOWING TO END MEMO"
600 FOR X=1 TO LEN(Z$):SYMBOL((X-1)*16,10),MID$(Z$,X,1),2,2,INT(RND(1)*7)+1:NEXT
610 FOR X=1 TO 4:LOCATE 6+2*X,25:READ SINEOFF$(X):COLOR X+1:PRINT X;" ";SINEOFF
$(X):NEXT
620 COLOR 4
630 LOCATE 25,15:PRINT "MAKE YOUR CHOICE BY ENTERING APPROPRIATE NUMBER";
640 Z$=INKEY$:IF Z$="" THEN 640
650 IF Z$="1" THEN SINEOFF$=SINEOFF$(VAL(Z$))
660 IF Z$="2" THEN SINEOFF$=SINEOFF$(VAL(Z$))
670 IF Z$="3" THEN SINEOFF$=SINEOFF$(VAL(Z$))
680 IF Z$="4" THEN SINEOFF$=SINEOFF$(VAL(Z$))
690 IF VAL(Z$)<1 OR VAL(Z$)>4 THEN 640
700 RETURN
710 DATA THANK YOU,THANKS,AWAITING YOUR REPLY,NO REPLY NECESSARY
720 IF ERR=5 THEN LOCATE CSRLIN,1:RESUME NEXT
730 CLS:LOCATE 1,1,0
740 A$="M E M O   W R I T E R":FOR X=1 TO LEN(A$):SYMBOL(320-(LEN(A$)*16)/2+(X-1
)*16,10),MID$(A$,X,1),2,2,INT(RND(1)*7)+1:NEXT
750 LOCATE 5,1:COLOR 3:PRINT "THIS PROGRAMME ALLOWS YOU TO WRITE A MEMO ON YOUR
MONITOR AND HAVE IT PRINTED":COLOR 6
760 PRINT "ON YOUR PRINTER IN THE FORM OF A MEMORANDUM.  YOUR ADDRESSEE, SUBJECT
, DATE AND":COLOR 3

```



```

770 PRINT "REFERENCE NUMBER ARE ALL ARRANGED IN THE STANDARD MEMO FORMAT ON THE
PRINTOUT.":COLOR 6
780 PRINT :PRINT "AS THE PROGRAMME BEGINS, YOU WILL BE PROMPTED TO INPUT THIS IN
FORMATION. YOU":COLOR 3
790 PRINT "WILL THEN PROCEED TO THE BODY OF YOUR MEMO WHICH YOU TYPE IN USING TH
E FOLLOWINGKEYS":COLOR 6
800 COLOR 2
810 LOCATE 12,10:PRINT "ALL STANDARD ALPHA-NUMERIC KEYS (BEEPS IF NOT ALPHA-NUME
RIC)"
820 LOCATE 14,10:PRINT"THE BACKSPACE KEY TO BACKSPACE WITHOUT ERASING"
830 LOCATE 16,10:PRINT "THE RETURN KEY TO INITIATE EXIT/RETURN OPTIONS"
840 LOCATE 18,1:COLOR 3:PRINT "WHEN YOU REACH THE END OF A LINE, MEMO WRITER WIL
L AUTOMATICALLY WRAP YOUR":COLOR 6
850 PRINT "SENTENCE AROUND TO THE NEXT LINE. IN THIS WAY YOU NEED NOT WATCH WHE
RE YOU"
860 COLOR 3:PRINT "ARE ON THE LINE AND YOU WILL NEVER REQUIRE HYPHENATION. THIS
FEATURE GIVES":COLOR 6
870 PRINT "YOU THE FREEDOM TO WRITE YOUR MEMO WITHOUT ATTENTION TO ANY SPECIAL F
ORMAT.":COLOR 3
880 PRINT "PRESSING THE ENTER KEY BRINGS UP TWO OPTIONS-- 1) END THE MEMO, OR 2)
RETURN TO":COLOR 6:PRINT "PREVIOUS CURSOR POSITION OR START A NEW PARAGRAPH"
890 LOCATE 25,25:COLOR 4:PRINT "PRESS ANY KEY TO BEGIN";
900 A$=INKEY$:IF A$="" THEN 900 ELSE 130
910 FOR X=80 TO 1 STEP -1
920 IF MID$(MEMO$,X,1)=" " THEN MEMO$=LEFT$(MEMO$,X):RETURN
930 NEWMEMO$=MID$(MEMO$,X)
940 NEXT
950 MEMO$=NEWMEMO$:NEWMEMO$="":PRINT MEMO$;:I$="":RETURN

```



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INPUT OUTPUT

TIM PURVES

Soft Sector Contributing Editor

Q. I just purchased a Video RAM Board. When I try to output to the screen by addressing memory at Segment B800, I get what looks like hundreds of cursors all over the screen for a split second. Programs like Lotus 1-2-3 don't appear to do it at all. I tried turning off the cursor but the result is the same. Is there something else I should do?

*Luis A. Capriles
Palm Bay, FL*

A. Directly addressing screen memory is not recommended. You should use the BIOS functions 10H to provide portability. If you don't wish to have portability, here are a couple of subroutines extracted and simplified to work only with the video board from my screen windows package.

```
CRTCTL      equ 003dah
SCREENSEG   equ 0b800h
;
; peek return in AX the character and attribute at screen BX
;
scr_peek:
    push     ds
    push     dx
    mov      ax,SCREENSEG
    mov      ds,ax          ; address color screen
    pushf                    ; save flags
    mov      dx,CRTCTL      ; CRTC control port
m1:
    in       al,dx          ; get crtc status
    test     al,9           ; wait until beam is on
                          ; the screen
    jnz      m1             ; Still off screen loop
                          ; some more
    cli                      ; Don't bother me for a
                          ; while!
m2:
    in       al,dx          ; get flags again
    test     al,9           ; wait for beam to go off
                          ; screen
    jz       m2             ; still on screen
monol:
    mov      ax,[bx]        ; grab the data (ah=at-
                          ; trib al=char)
    popf                    ; reenable interrupts if
                          ; they were on before
    pop      dx
    pop      ds
```

```
ret
;
; poke set char and attrib in AX to screen BX
;
scr_poke:
    push     ds
    push     dx
    pushf                    ; flags
    push     ax              ; save char attrib
    mov      ax,SCREENSEG
    mov      ds,ax          ; address screen SEG-
                          ; ment
    mov      dx,CRTCTL      ; crtc status
m3:
    in       al,dx          ; get status
    test     al,9           ; off screen?
    jnz      m3             ; yep! keep looping
    cli                      ; stop me cold!
m4:
    in       al,dx          ; get status
    test     al,9           ; on screen?
    jz       m4             ; yep!, wait until off
                          ; screen
    pop      ax              ; char to write
    mov      [bx],ax        ; slam bam — its on the
                          ; screen!
    popf                    ; old interrupt flags
    pop      dx
    pop      ds
    ret                      ; back to the farm
```

Q. Is there any way to switch the clock speed on the Sanyo MBC-775 from 8 MHz to 4.77 MHz. The new 775 machines have a switch to accomplish this, but can anything be done for old 775 users?

*Bonnie Anderson
Knoxville, TN*

A. I don't know of a switch upgrade to slow down the older 775 computers. I personally have an IBM compatible that I designed which runs at an effective speed of 12 MHz and I wish it ran faster.

Q. I'm extremely grateful for your fix to the Sanyo parallel port, FPRINT.COM which comes with DS-DOS Plus. However, I get double characters at random when I am hooked up to my MicroFazer print buffer. Do you have any suggestions?

*Rick Guides
San Jose, CA*

A. The real problem is in the printer or printer buffer interface. The strobe line should be edge triggered and not just

(Tim Purves is an expert on the Sanyo MBC-550/555 series computers and is an experienced programmer in assembly code, PASCAL, C and BASIC. He is available to answer any technical questions that the readers of **SOFT SECTOR** might have. All questions should be addressed to **SOFT SECTOR**, P.O. Box 385, Prospect, Ky. 40059.)

an active signal. I had the same problem with my *Micro-Spooler* print buffer. What FPRINT does is shorten the strobe pulse generated in software. To shorten it further, you must remove the induction coil on the Sanyo motherboard which is in a series with the strobe line (Pin 1), and replace it with a very short piece of wire.

Q. I have the following CONFIG.SYS file on my boot disk:

```
FILES=10
BUFFERS=20
DEVICE=RDISK.SYS 100
BREAK=ON
SHELL=A:COMMAND.COM
```

Ever since I added SHELL=A:COMMAND.COM, to the CONFIG.SYS file, the system has stopped prompting me for the date and time.

Alan A. Martin
Burke, VA

A. You must specify /P for COMMAND.COM to initialize itself. The proper syntax is as follows:

```
SHELL=A:\COMMAND.COM /P
```

The /P forces the command program to execute the AUTOEXEC.BAT file if found, and to initialize housekeeping variables.

Q. I am looking for information on how to program the 8255A programmable peripheral interface. A simple application I would like to write is a program to send control codes to my printer.

Thomas Becker
Chandler, AZ

A. The Intel component guide is a good source on how to program the 8255A PPI chip. Let me offer a bit of advice: You would be wiser to use the BIOS serves to output to the printer. Not only does it make your life easier, it's portable. Leave the "mucking with the hardware" to people like myself who write BIOS routines. Bypassing the BIOS is the only reason most of the programs written for the IBM don't work on the base Sanyo (and most of them could have). If a programmer wishes to bypass the BIOS, then he should check to see if he can. If the required hardware is not there, use the BIOS calls.

To send control codes out to the printer these routines should help:

```
code segment
    assume cs:code,ds:code
```

```
;
; set BIOS to 1 if IBM compatible
; set MS-DOS to 1 if generic MS-DOS
;
; only one can be a 1
;
```

```
BIOS    equ    0           ; it will work on IBM types
MSDOS   equ    1           ; it will work on any MS-
                           ; DOS machine!
```

```
PRINTER equ    17h
DOS      equ    21h
        org     100h
start:
    jmp     over
init:
    db      27,14,0        ; code to printer (Epson
                           ; compressed)
                           ; add any codes you want
                           ; here
                           ; end with a zero byte
```

```
exit:
    int     20h            ; bye bye
```

```
over:
    mov     si,offset init ; codes to printer
```

```
senddata:
    cld                     ; direction forward
    lodsb
    or      al,al           ; is it the zero byte
    jz      exit
```

```
ifeq BIOS                    ; works on any IBM BIOS
                             ; compatible (Sanyo)
    mov     ah,1           ; printer out char in al
    xor     dx,dx          ; lpt1:
    int     PRINTER        ; call BIOS
endif
```

```
ifeq MSDOS                   ; any MS-DOS machine
                             ; (any!!!!)
```

```
    mov     ah,5
    mov     dl,al          ; char to write
    int     DOS
```


```
endif
    jmp     senddata        ; send until Z byte
```

```
code ends
end start
```

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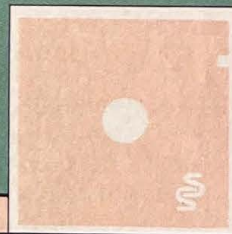
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The MBC-675

By Jim

When Sanyo introduced the MBC-550, it made a definite place for itself in the market. Perhaps I should say it filled a place in the market that was not filled until the 550 was marketed. It made possible the purchase of a real MS-DOS computer for \$1,000.

When the MBC-775 was introduced, Sanyo made another move that no one else had made: They marketed a fully compatible portable with a built-in RGB color monitor. To my knowledge, the 775 remains the only portable with internal color.

In the world of microcomputers, those were the old days. The market is now flooded with IBM compatibles in all shapes, sizes and prices. There are desktops and portables, laptops and briefcase machines with LCD screens and built-in modems. And they are all very compatible. It is into this market that Sanyo has introduced the MBC-675, a small portable with a green monitor, two floppy disk drives and 256K RAM. *WordStar* and *CalcStar* are included in the package along with MS-DOS and GW-BASIC.

So Sanyo is now into a market that is already occupied. That brings up the

question of what Sanyo has that the others don't.

First of all, the 675 is small. Small, that is, for a transportable. Let me define my terms here so that we are all talking about the same thing. I call a transportable a computer that contains all the components necessary for use at some location away from its primary location. It can be carried there, but not without some discomfort. Transportables require an external source of power. They do not run on batteries. A portable is light and does run on batteries, but often neglects some of the things which, in my opinion, make it a fully operational computer. These little things are frequently disk drives and readable displays.

The 675 is a transportable. It has an excellent seven-inch display and a pair of 360K disk drives. Its keyboard is good, with a nice light touch. Its cooling fan is noticeable, but I have heard much worse. The keyboard attaches to the front of the main unit by means of two little plastic clips. I had trouble putting it together the first few times because the keyboard cord tends to get in the way. After awhile I got the hang of it and it's not so bad. The attachment seems to be secure. There is a compartment for the power cord at the back of the main unit.

The outstanding feature of the 675 is its size. It measures 18.3 inches wide by 12 inches in depth by 7.8 inches in height. To the best of my knowledge, at the time this is being written, that makes it the smallest IBM-compatible transportable on the market. What do you have to give up to gain the small size? Nothing.

The only penalty is that the 675 cannot accept the standard full length IBM expansion cards. This is not much of a penalty, though, because almost everything you will need is on the main board. There is a parallel port, a serial port, and outputs for either a composite or an RGB monitor. You can install an extra 384K of memory on the main board to bring the 675 up to the full 640K that MS-DOS will address.

There are two of the short slots available into which you can put a modem or a hard disk controller. Sanyo says they have installed hard disks in the 675 with no problem. There are several controllers on the market now at the half length size. If you are interested in installing a hard disk, I suggest you call Sanyo for recommendations. You might also wish to consider the purchase of a Sanyo MBC-670, which is exactly the same computer with only one floppy disk drive.

The 675 is an easy transportable to use. Just remove the keyboard from the main unit, set the front of the computer up on its legs (if that is your preference), plug it in, boot it up and go. The keyboard also tilts up a bit at the back, if you like. I, personally, like both the computer and the keyboard to be tilted. The IBM portable, by the way, does not have any provisions for tilting the computer.

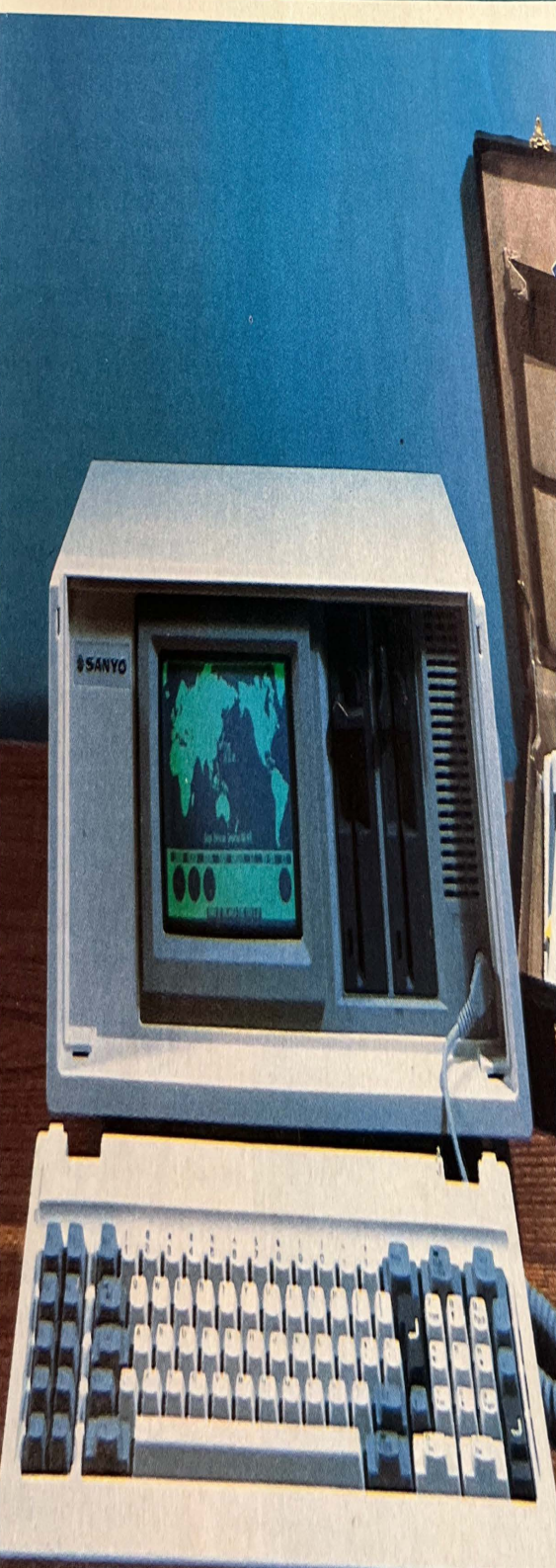
The monitor is clear and crisp with no noticeable jitter. I hate jitter and would have certainly noticed any.

The persistence is a little longer than I like, but that seems to be "in" these days and the 675 is not as bad as some of the others I have seen. A longer persistence

(Jim Pile is an instrumentation engineer with Brown & Williamson Tobacco Corp. He has been working with Sanyo computers for two years and writes product reviews for SOFT SECTOR. He may be contacted at 9213 Ponder Lane, Louisville, KY 40272.)

Sanyo's New Compact Transportable

ile



does cut down on the flicker and Sanyo seems to have hit upon a near optimum balance between flicker and persistence.

The back of the main unit has a brightness control (a contrast control would be a help at times) and the serial and parallel ports. Also on the back are the monitor output connectors. For moving the 675 around, Sanyo has provided a compartment for the power cord. The parallel port requires a DB 25 like the IBM, rather than the Centronics-type connector on the 555.

The documentation consists of a single manual containing information on GW-BASIC and MS-DOS as well as all the hardware information Sanyo sees fit to provide. I must say that even though the documentation seems somewhat sparse, there were bright spots. For example, there is detailed information on how to disassemble the 675 and add memory or expansion cards. The overview of DOS is about as good as I have seen in the manuals of any other manufacturer and the BASIC is not bad. With Sanyo, as with any other company I know of, if you don't know DOS and BASIC when you pick the manual up, you won't know them when you put it down. The manual does not make any pretense of being a tutorial. None of them do, so I suggest that if you need a tutorial, look in the local bookstores.

No computer manufacturers provide free tutorials. I suppose what I'm saying is the 675 documentation is about average. I've seen a few better and many worse.

Now for compatibility. Compatibility is the big thing these days. Whether we like it or not, the biggest group of software written for PCs in the world, is written for the IBM. Any MS-DOS computer must run the IBM software if it is to be a success in the market. The 675 is no slouch in this area. I ran *dBASE III*, *dBASE II*, *Lotus 1-2-3*, *WordStar* (IBM version), all the Infocom games, *Turbo Pascal 3.0*, the Norton Utilities, and PC-DOS 2.1 and 3.1. *Flight Simulator* has become the big test of IBM compatibility in the minds of some and it runs without a hitch on the 675. I did find one group of programs that will not run; the copy programs such as *Copy II PC* and *CopyWrite*. Sanyo is aware that they won't run, but offered no explanation as to the reason.

If you are a 555 user thinking of buying something with more compatibility, one of the things you will notice is a definite decrease in the graphics resolution. You will probably miss the SYMBOL command, too. That's the price you pay for complete compatibility. It really isn't as bad a trade off as you might think at first. Consider all the software you'll have access to that you didn't before. If you already own another compatible and need a transportable, the 675 is small and weighs in at 28 pounds. That's lighter than most. The IBM Portable PC weighs over 30 pounds

"The outstanding feature of the 675 is its size. It measures 18.3 inches wide by 12 inches in depth by 7.8 inches in height. To the best of my knowledge, at the time this is being written, that makes it the smallest IBM-compatible transportable on the market. What do you have to give up to gain the small size? Nothing."

and the Sanyo MBC-775 is over 40. The IBM also doesn't have a serial or parallel port. It also requires a memory expansion card to go above 256K.

If you have no computer at all, but are thinking of buying one, consider this: The 675 can fill all your needs as a home computer as well as a portable. You can add a hard disk, a printer and 640K of RAM. If you would like a larger monochrome monitor or an RGB color monitor, all you have to do is plug one into the back of your 675. Equipped like this, you have all the power of a desktop and luggability as well.

In the Norton Utilities package, there is a program called *SYSINFO* which checks out your compatible for you. It will tell you where the video display memory is located, give you the BIOS ROM signature if it can find it, and tell you how fast your compatible will run as compared to the standard IBM PC. This program says the 675 has the same speed of execution as the IBM. Since Sanyo has done everything to make it compatible, that's not really surprising. The 675 CPU is an 8088 running at 4.77 MHz — just like IBM. The graphics screen memory is found at offset address B800 just like an IBM with a color card installed. It has to be that way to run all the software. Just as a matter of record, I would like to note that an IBM with a standard monochrome monitor and adapter is not really 100 percent IBM compatible. In order to make it so, you must install the color card. The IBM Portable PC comes with the color card installed just as color provisions are made in the 675. The catch is that some colors are very poorly rendered on the IBM screen. Some are, in fact, not readable. I had no problem along these lines with the 675. All the colors in all the programs I tested were very readable.

Since the 675 runs at the standard IBM PC clock speed, there is no problem at all with programs that are clock dependent. The only difference I found at all was that the 675 took 80 seconds to format a disk while the IBM took 65. The MBC-555 takes about 60. I do not know why the 675 is a bit slower on format. Everything else was the same. That makes me wonder if the reason the copy programs I mentioned earlier fail to run because of some timing differences in the way the floppy drives are controlled. The copy programs I mentioned are rather dependent on drive timing. I don't consider the difference in format times to be of any special import. It certainly is nothing big enough to scare anyone away from the 675.

I like the 675. It is definitely one of the modern breed and demonstrates that Sanyo is definitely still in the market. The size makes the 675 more appealing than some of its similarly priced competitors. On top of that, its capabilities make it a definite workhorse. I think Sanyo has another winner.



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Hardware review

NEC V20 — Super-Charged CPU

If your programs seem to be running a little slow lately, then NEC's new V20 CPU chip may be for you. This pin-for-pin compatible CPU chip (with Intel's 8088), has the ability to speed up program execution between 5 and 100 percent. While this increase in speed mainly depends on what type of program you are running (the V20 is very fast with math-oriented programs), most people report a general increase in execution speed of between 10 and 20 percent. This is especially noticeable when working with programs which use a lot of CPU time. A good example is computer chess.

Along with speeding up the CPU, NEC has also provided a host of additional machine language commands. These commands generally fall into the math and data manipulation area (multiply, shift, set, test and many more). They bring the potential computing power of the V20 up to that of a larger and more powerful computer. Many of the machine language commands are similar to those used in the IBM AT computer.

And if all of the above is not enough, the V20 can operate in two different modes. The first mode is called the "Native" mode. This is the normal operational mode for the V20. In this mode the V20 operates like a super-charged 8088 CPU. The second mode is called the "Emulate" mode. In this mode, the V20 operates exactly like Intel's 8080 CPU chip with a few important additions.

First, you can switch back and forth between modes. This means that 8080 and 8088 machine language can be intermixed. And second, 8088 interrupt service routines can be called. This opens the door to the use of CP/M (Control Program for Microprocessors).

The largest body of software available to the personal computer user runs under the CP/M operating system. This operating system is the predecessor of our current MS-DOS and has been around for a long time. Over the course of time, many fine programs have been developed for CP/M, and a great number of these programs are in the public domain. The advantage is, by having a choice of operating systems, you will have a greater variety of programs to run.

On the physical side, NEC's V20 comes in a ceramic 40-pin dip (dual inline package). Two versions are available, both 5 MHz and 8 MHz. While either version will work in the Sanyo, it is suggested that if you have a choice, get the 8 MHz version. You will be using a better quality chip.

The V20 is readily available from many mail-order houses. The current price is about \$30. While we have seen the V20 advertised at less, by the time you add shipping and handling, you're back over \$30. There are two rules of thumb to follow. First, insist on a *top quality* chip. And second, order from a reputable dealer.

NEC's V20 is very easy to install. Basically, you open the computer, just like you would to install memory chips (Note: See the instructions in the back of the *Sanyo Operator's Guide*, which came with the computer.) Carefully remove the 8088 CPU chip, and replace it with the V20. Make sure that you install the V20 with the notch facing the back plate of the computer, else when you power up you will destroy the V20

and probably damage the rest of the chips in the computer. Be careful of static. These chips are hardy, but like any other chip, can be damaged by static. Finally, check to make sure that no pins are bent, and reverse the disassembly process (put the computer back together again). When you power up, the standard Sanyo DOS should boot up without any problem.

Is it possible to have too much of a good thing? Well, the V20 runs so fast that its speed can cause problems with some programs.

Normally, when setting up or accessing an external device (disk drive, communications port, keyboard, etc.) a little bit of time has to be wasted in order for the device to respond electronically. Generally what programmers do is use a machine language command which will not affect the current subroutine, in order to kill time.

A good example of this is the AAM (ASCII Adjust for Multiply) command. AAM normally uses 83 clock cycles and is used extensively to time disk access. Where the problem with the V20's high speed comes in, is the V20 executes the AAM command four times faster than normal. This can cause the disk access to work improperly.

Two programs which use this disk access are FORMAT.COM and DISKCOPY.COM. Fortunately, patches are available for some versions. Basically, what these patches do is change the AAM to a command which wastes more time (MUL AL, PUSH POPR, IMUL, etc.).

If no patch is available for your version, you can correct most programs with DEBUG. For example: simply run DEBUG and load in FORMAT.COM or DISKCOPY.COM, use the search function to find all of the D4 0A (AAM), use the edit function to replace these with F6 EC (IMUL AH), and write the program back out to disk again. Now the program is even better than before and it runs faster.

Other programs which will have problems are the BOOT for

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the Video RAM Board DOS and some communications programs. The problem with the video board BOOT can be corrected simply by replacing it with the BOOT for the standard DOS, or making a correction similar to the ones described above.

As for communications programs, some work correctly, however many of the better ones will have to have their timing adjusted. This is particularly true in the protocol area. An example is the timing loops used in *Xmodem*. If you are having problems, contact the manufacturer; perhaps a patch is in the works.

When all is said and done, these problems are really nothing. They present only a minor inconvenience and are in some respects desirable. If you're going to have a problem, it's better to have a problem with the CPU being too good, rather than the opposite. Also, it's kind of fun tracing down the timing commands (AAM's, etc.) and getting a program to work correctly. In a way it's like solving a mystery.

On the down side, since the V20 has only been on the market for a short period of time, there is not much software available for it which will take advantage of the V20's superior machine language commands. Also, at this point in time, the BIOS (BASIC In/Out System) of CP/M, for the Sanyo, has not been written.

In summary, will software be written which takes advantage of the V20 superior design? It all depends on how popular the V20 becomes. At present, there is not much more than patches for existing software available. However, rumor has it that there are a number of exotic software packages being developed.

Should you get the V20 now or wait? Well, that depends on what you are using the Sanyo for. Sooner or later, some of the rumored software packages will become available and more than likely you will eventually install a V20. However, if you

like to be on the leading edge of technology, or like to tinker and don't mind correcting software (with DEBUG), then don't wait.

(I.C. Express, 15358 Valley Blvd., City of Industry, CA 91746; 818-369-2688, \$25)

— Bob Jack

List of New Commands in NEC's V20

Mnemonic	Description
PUSHR	Push onto stack all registers.
POPR	Pop from stack all registers.
PUSH imm16	Push onto stack immediate data.
MUL reg16,mem16	Multiply register by memory.
MUL mem16,imm16	Multiply memory by immediate.
SHL reg8/16,imm8	Shift left register by immediate.
SHR reg8/16,imm8	Shift right register by immediate.
SHRA reg8/16,imm8	Shift right register by immediate.
CHKIND reg16,mem32	Check array index.
PREPARE imm16,imm8	Generate a new stack frame.
DISPOSE	Dispose of stack frame.
INS reg8,reg8/4	Insert bit field into memory at offset.
EXT reg8,reg8/4	Extract bit field from memory at offset.
ADD4S	Add 2 BCD strings.
SUB4S	Subtract 2 BCD strings.
ROL4 reg8	Rotate BCD data in register left.
ROL4 mem8	Rotate BCD data in memory left.
ROR4 reg8	Rotate BCD data in register right.
ROR4 mem8	Rotate BCD data in memory right.
REPC	Execute next instruction until CY = 1.
REPNC	Execute next instruction until CY = 0.
BRKEM imm8	Brake emulate. Emulate 8080 mode.
RETEM	Return from emulation. Native 8088 mode.

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CALLN imm8

Call native interrupt service routine.

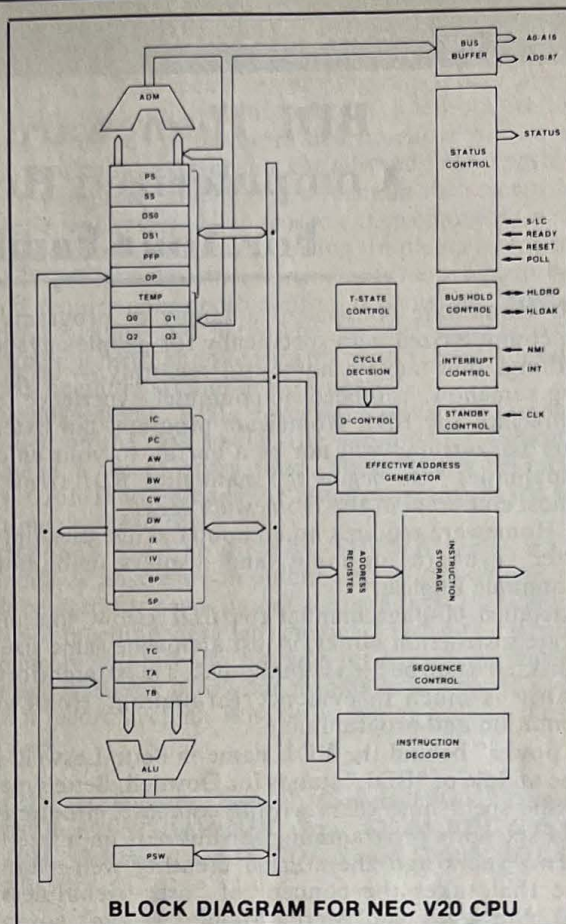
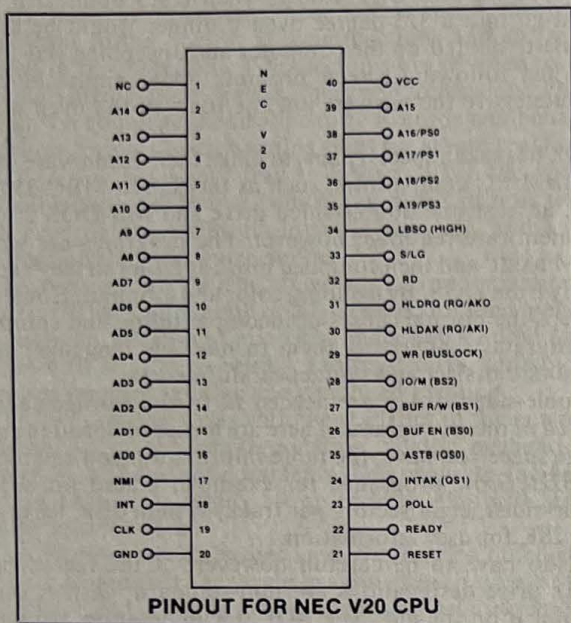
RETI

Return from int service to calling mode.

TESTI — NOTI — CLRI — SETI

Test, not, clear or set works on:

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mem8/16,CL
reg8/16,imm3/4
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BDL Homeware — Computerized Help For Your Family

"BDL Homeware consists of a family of programs that provide computerized help specifically for people engaged in all the things that make a home run smoothly — or at least go along somehow. You need no computer experience to use and appreciate any BDL Homeware program, but extensive computer background will not be a barrier to your enjoying their capabilities." So begins the manual of *BDL.Grow*, one of the most elaborate of the Homeware series.

BDL Homeware requires no computer skills, uses only the typewriter keyboard for input, and displays in humorous, understandable English.

The detailed 40-page manual for *BDL.Grow*, like all the Homeware instruction books, is just about the same size as a floppy disk, so it can be filed with the disk. This straightforward practicality is much in evidence throughout Homeware's documentation and programming.

The "power" behind the BDL name is Bette Laswell. (The 'D' in the middle of "BDL" stands for Dowdell, Bette's maiden name.) She spent nine years writing computer programs for IBM and six years programming for business on a free-lance basis. Two years ago she started creating well-mannered software that takes the concept of "user-friendliness" to extremes. Messages like "Mercy Maude, we can't go on like

this" or "Woe is me. Or maybe woe is you. Let's try it again" replace the typical computer error messages like "Fatal error." Furthermore, instead of crashing, the program usually recovers and continues.

Laswell's programs are designed with the computer novice in mind, and her 80-year old mother, Josephine — not exactly a computer whiz — has been the tester for some of Bette's programs.

Josephine's first time in front of a computer had her trying to determine, with *BDL.Roast*, when a 9.5 pound rib roast should go into a 325-degree oven if dinner would be at 6:15 p.m. Bette booted-up the computer and Josephine was on her own, just following screen prompts. One minute later the computer gave the answer: Put the roast in the oven at 2:42 p.m.

BDL has taken special pains to make their Homeware usable with IBM PC compatibles, such as the Sanyo MBC-550/555 series; at least one double-sided drive and MS-DOS 2.11 (or equivalent) are required, however. The programs are written in IBM BASIC and then compiled into .EXE files so they execute directly from DOS. By avoiding color and graphics, Homeware sidesteps the normal causes of incompatibility, and compiling the programs (converting them to machine language) eliminates BASIC dialect and syntactical differences.

Double-sided drives are needed to fit the storage capacity required of these programs. There are lots of files, and the more storage space you have, the more information you can record. The *BDL.Grow* programs, for example, placed on a 320K (double-sided, eight sectors per track) system disk, leave only about 28K for user information.

You do have to be careful, however, of the fact that the Sanyo's drive designations are non-standard, with A on the right and B on the left. The BDL documentation assumes A on the left, as it is with the IBM PC and most of its clones.

There may be a problem with printer output. The program is designed to use the IBM PC dot-matrix printer codes, which are the same as used by many modern dot-matrix printers. Although "plain-vanilla" printing is used in most places, an incompatible printer might respond oddly where expanded characters are specified by the program. I used an Epson workalike, the CP-80 Type 1, with no problem.

I reviewed *BDL.Grow* specifically, and we'll get to that shortly. Here are short descriptions of programs in the Homeware family:

BDL.Gift lets your computer keep track of who gave what to whom and when. To make gift giving even easier, *BDL.Gift* stores clothing sizes, hobbies, color preferences, etc., for the people on your gift list and presents the information to you 30 different ways!

BDL.Celebrate remembers birthdays, anniversaries and other important dates, and keeps up to five separate, reusable name and address lists. It prints a list, or labels, for the entire file or just for celebrants. This can be used for church or club work as well as for home.

BDL.Roast calculates how long it takes for different cuts of

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beef, pork, lamb or fowl to reach a desired level of "doneness" in a 325-degree oven. Based on the weight, cut and the time dinner is being served, the program figures out exactly when to put the meat in the oven. (A 44,800-pound pot roast, for your information, should start cooking 932 days before dinner.) The computations in this program are based on information from over 30 cookbooks.

BDL Health, the newest program in the Homeware family, allows you to take an active part in your medical care, and help your doctors help you. The program has eight sections. Health "events," such as office visits, hospitalizations, home illnesses, phone calls to the doctor, allergic reactions and so forth are covered in three sections. Four sections are devoted to health "actions": medications, tests, surgery and treatments. The final section is a complete medical history. Records can be recalled in various formats, with warning flags for severe reactions.

BDL Grow is an easy way to keep and use the necessary medical records for the well child. It consists of four sections, each completely different in what they do and in what information they recognize and use.

The sections are "Birth," "Growth," "Immunization" and "Doctors." You can use any or all of the sections independently. For example, a friend of mine just had a baby. I used one part of the birth section to print a full-page birth announcement that uses centered regular and expanded printing.

The birth section deals with the statistics of the newborn — date, height, weight, length, location, doctor, medications for mother or child and any comments. This program, incidentally, will handle a large family — up to 99 births, with up to 99 medications for each!

The growth section stores periodic entries of height and weight and produces separate graphs of each on a printer or the screen. The graph is made of text and asterisk characters, available on any common microcomputer printer. However, printer compatibility, as mentioned earlier, is only assured with a dot-matrix printer that uses IBM control codes (as most do).

The immunization section records, of course, immunization dates, but can also include dosage, reactions and any comments. A listing of all past immunization names and dates is easily obtained, including allergic reactions.

The doctors section contains names and addresses of all doctors, hospitals, clinics, pharmacies, midwives, therapists, practitioners or whatever is used by your family.

However, the capacity of the information files is limited to only 9,999 entries each! Tsk, tsk!

Although we haven't had a birth in our immediate family in 26 years, I exercised **BDL Grow** for this review and generated the birth announcement mentioned earlier.

The program disk comes nicely packaged and protected. The documentation is complete and provides more detail than you'll probably ever need since the programs are well prompted.

It was necessary to move the programs to a system disk, and the procedure for doing this is described in detail. (Don't forget the Sanyo left-right drive designations are the reverse of the IBM PC.)

The program ran smoothly, with generous prompting and plenty of screen confirmations of the actions anticipated or taking place. The sequences are logical. Where prompts are asking for user-supplied information, a left-square bracket is placed at the end of the input field to show you how far you can type without overflowing the allowed field length. In other words, you pretty much fill in a form on the screen.

I generated several birth records, then changed them, erased them and recovered them following simple screen instructions. I didn't get into the other sections of the program because it would require considerable effort to generate "dummy" files to print graphs and lists. The booklet shows five sample printouts: a birth announcement, birth record, immunization record, height chart and growth chart.

I've suggested to **BDL Homeware** that some sample files be included on the disk so the user can practice without having to spend a lot of entry time. These might be included in **BDL Grow** (and perhaps the other programs in the series) by the time you read this.

Although the Sanyo MBC-550/555 series micros are intended as business computers, where is it written that they can't be used for some practical home tasks? If you are in the habit of keeping detailed medical and gift records, **BDL Homeware** will provide a means for organizing this information and recalling it to your printer or screen. If you are lax in your record keeping, this software may provide the incentive you need.

(**BDL Homeware**, 2509 N. Campbell Ave., Tucson, AZ 85719; 602-577-1435; **BDL Grow**, \$39.95, **BDL Gift**, \$34.95, **BDL Celebrate**, \$34.95, **BDL Roast**, \$24.95, **BDL Health**, \$39.95)

— Fred Blechman

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MyCalc — A Superior Spreadsheet

Don't let the amateurish-sounding name fool you: *MyCalc* is a superb spreadsheet which is inexpensive (just under \$60), easy to learn, and fun to use. I base the latter judgement by comparison to the likes of these: *VisiCalc* for the TRS-80 Model 3, the Model 4, the Sanyo 555's bundled *CalcStar* (which is both inadequate and buggy, not to mention overpriced when sold directly), and general exposure to *Lotus 1-2-3* by colleagues.

So, let me say right now: If you like the idea of a spreadsheet for doing calculations, loan amortizations or taxes, or even, as I did, to create templates for grade records for use by teachers/professors or whatever, and you only have the *CalcStar* package, buy *MyCalc*. If you are at all like me, you might find yourself, for the first time, actually learning (thanks to the more intuitive commands), doing and looking up. I found myself increasingly delighted and enthusiastic as I played around, so you'll have to forgive me if I am gushing.

If you have some spreadsheet familiarity, I suggest just jumping right in after you configure and load this calc program. Play around and use the manual's index or table of contents to move about. You'll learn more (and this is true in much about reading) if you read what you really want to read, rather than slavishly going from front to back.

For those of you who lack familiarity with the concept, no problem. *MyCalc*'s documentation is more than adequate to get you going. Although the manual of about a hundred or so pages uses small-sized paper, I found it complete with a table of contents and index (items I ordinarily don't use much) to allow me to find out what I wanted to know quickly. The manual is also quite literate, with few typos.

The basic *MyCalc* spreadsheet, like most others, has to be imagined as a gigantic rectangular array in which each cell in the array is addressed by a letter and a number. The upper left-hand corner of your screen is Location a1. To its right is b1, then comes c1, etc. Below a1 is a2, then comes a3 and so on. You know the labels because the letters are printed across the top of the screen; the numbers are printed down the left side. Of course, there are so many that you only see a few at one time.

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4224 University Way N.E.

Seattle, WA 98105

Telephone: (206) 547-TYPE

To get into the program, you first configure it for your Sanyo, as the default computer is the IBM PC. Don't be alarmed. I timed the process, and it takes about 30 seconds. I wish all configurations could be that quick! Next, you load the program, MC. Not only do you get the program MC.EXE, but there's a second version DMC.EXE. The difference is that the latter allows the use of additional memory if you have more than the minimal 128K system. Since, as do most of you, I have a 256K machine, I always use DMC. DMC's spreadsheet is 255 rows (numbered 1 to 255) by 52 cells (a to z followed immediately by A to Z). You can multiply 255 by 52 for yourself to see how many cells this allows. You will find that you have about 147K available on a 256K machine, which compares with *CalcStar*'s 150K.

MyCalc is available on either one double-sided disk or two single-sided disks (8 sectors per track for the latter for those of you still using MS-DOS 1.25 unmodified). Just before review time, I had converted from single- to double-sided drives, and in the process, I found The Software Toolworks very accommodating, not only in answering my questions (which were few; in fact, none if I had read the manual!), but also in supplying additional review copies to allow me to begin the review prior to conversion of my system.

If this is not enough — and believe me, it really is — you also get a tutorial right on disk and, even better, some useful loan amortization and income tax files. The loan amortization files (a topic near and dear to me, as fellow charter subscribers and readers know) have several overlays. All this means is that you can just load in the pre-existing spreadsheet called AMORTIZE.MC, and use it right away, or load in additional files (providing they don't use overlapping cells), as I did with AMORT30.MC, which really is the up to 30-year amortization table or schedule. I was impressed with the knowledge of mathematics involved, including exponential functions and logarithms. (Query: Does *CalcStar* even allow exponentiation? I never found out how to do it, if it can.) In fact, *MyCalc*, unlike *CalcStar*, supports trigonometric functions and other such niceties. While I, as a mathematician, particularly appreciated these inclusions, I have heard many nonmathematicians express annoyance at the incompleteness of *CalcStar*.

For those of you who have never even played with your bundled *CalcStar*, you can try it just to get a feel for what it's all about. The idea is that you can freely enter labels, values and formulas. Formulas relate the cells to one another. The beauty is that, as you change the values, any cells which use a formula based on those values are automatically converted. Thus, you can do budgeting since the arithmetic involved is easy to set up. And, you get the famous "What if?" which characterizes spreadsheets, the same idea with which *VisiCalc* — now a dinosaur — almost single-handedly launched the Apple computer and the microcomputer industry in general.

Today, of course, names like *Lotus*, *Symphony*, *SuperCalc* and *Multiplan* dominate the industry, and even Software Arts, father of *VisiCalc*, is liquidated as a company. But this application remains one of the most used by micro owners. There are many spreadsheets available, as you can see. Most are complicated. By contrast, *MyCalc*'s help screens, available by pressing the "?", tells you most of what you need to know. The commands are fairly intuitive and there are few or no abbreviations. Thus, your command options appear as words, not as single, cryptic letters.

Doubtless some of the other spreadsheets are also improvements over "grandfather" *VisiCalc*. One of the big differences is price. Another is the bonus templates which come. This is software with a reasonable price — some in the industry would say seriously underpriced.

Some of the features included are: a host of functions, logical operators, built-in functions such as sum, average, if . . . ,

Tax Preparation Software — A Package for the Professional Preparer

lookup and more. You can control appearance features of numbers, columns, format, justification, etc. Upon entering data into cells, there is automatic recognition of labels (characters, words, strings — non-numeric data) and numbers; formulas are recognized by first typing the equal sign. For the few ambiguous cases (e.g., suppose you wish to print the equal sign), you can force *MyCalc* very easily to recognize that you have a label and not a formula (type the double quote first in this case). Default for numbers is two decimal place display, but this is easily modified. You enter commands for reading and saving files, changing appearance and so on by first typing the backslash, then the letter of the command. You can replicate repetitious aspects of your spreadsheet — using GET and PUT commands, allowing filling of a buffer which may then be reproduced either verbatim or modified to apply relatively to the contents of the cells. For instance, you may have c1 through c5 summed and results in c6. Perhaps you want d1 to d5, e1 to e5, and f1 to f5 similarly summed. It is easy to arrange, through a range function, to have these done just from having c1 to c5 summed already.

I wasn't very clear about questions of default drives for saving and reading files, so I added the drive in the filename when in doubt. In any case, *MyCalc* is pretty forgiving with its error messages if you occasionally goof. One thing that I wish would be added is the ability to read the directory from within the program. How am I supposed to remember the filenames of templates previously constructed?

MyCalc offers you a last chance to save data if you exercise the "quit" option without saving first. As with all questions, you may hit RETURN to take the default option (in this case, no, you don't want to save). One nice thing is that you may overlay data files so as to create templates of data. The sample files provided do just that. All this boils down to is that you may load in some other data without necessarily losing your existing data — a kind of chaining or merging.

If you make a mistake and hit a function you don't really want, just hit the reverse backslash and that will usually get you out of trouble. You move around the worksheet by either the arrow keys or the GOTO option (SHIFT->). For menu options, only the backspace arrow key works if you wish to avoid typing the letter. In the spreadsheet itself, you know the machine is awaiting your instructions regarding a particular cell by the presence of a rectangular cursor located in the cell you are occupying at the moment. There are lots of things you can do to manipulate the data, and there are plenty to allow you great creativity.

If this still is not enough, there are suggestions for memory conservation, tips for hiding columns (make the width of the appropriate column), and the customary "cut and paste" operations for inserting or deleting lines of data. One tip that I will add is to be careful with the difference between upper- and lowercase, as a1 is not the same cell as A1, the former being at the upper left and the latter being really the top entry in the 27th column from the left.

In sum, this is a terrific program and a joy to review. Now I know what I have been missing by not using spreadsheets. *MyCalc* is one program which you will enjoy and use. I heartily recommend it. Buy it before The Software Toolworks reads this review, gets a swelled head and raises its prices!

(The Software Toolworks, 15233 Ventura Blvd., Suite 1118,
Sherman Oaks, CA 91403; 818-986-4885, \$59.95)

— Dr. Michael W. Ecker

Bummed out because its time to do your taxes? How would you like a computer program to help you through it this year?

1985 Tax Preparation Software is a program which automates the preparation of Federal (Form 1040) income tax forms and schedules as well as Missouri state (Form 40) income tax forms. The program is written in BASIC and walks the user through, in a step-by-step manner, the preparation of all of these. It is complete and follows the schedules line by line without missing a detail. It prompts you for input on the screen and then allows you to print out all of the forms and schedules, which you've completed the entries for, as well as saving the records to disk when you're done.

I don't claim to be an accountant and my exposure to tax preparation programs has been limited (this is the third one I've seen) so my review may not be exactly what the author had in mind. If he intends to sell it to SOFT SECTOR's audience, he should realize that he has targeted a very limited portion of the market. In his cover letter for the review submittal, the author stated that the program was intended for experienced tax preparers. I don't mean this as a criticism of the software, only as an observation that the software would be of limited use to the average taxpayer.

As with other tax preparation packages I have seen, the program guides the user through the preparation of the forms and schedules, but doesn't offer any advice as to whether or not specific items are or are not deductible and, of course, has no recollection of who you are or what your taxes looked like last year. These are functions which you yourself, or your accountant would need to perform, and I wouldn't expect the program to do it. With all of the microcomputer based expert systems software which is being developed by people such as Texas Instruments, a tax consultant program might not be that far from being achievable in the near term. There are, of course, legal implications but the liabilities wouldn't be any different from those involved in current tax preparation programs.

I did note the lack of the ability to compute taxes for any states other than Missouri. It would seem to me that the ability to enter state tax rates or purchase annual updates for all states would be an absolute necessity. By limiting the program to one state, the author limits his audience even further.

The documentation is relatively clear and straightforward and is about on par with payroll programs I have installed for small businesses. This is a limited use program but does seem to accomplish what it sets out to do very quickly and easily. If you're a preparer, or would like to become one, this may be the software for you.

(Tri-Lakes Software, 2200 E. Sunshine, Suite 114, Springfield, MO 65804; 417-881-5649, \$295)

— Bill Chang

ONE-LINERS

Here we are again with more winners of The First Great SOFT SECTOR One-Liner Contest. The authors of these winning entries will receive a copy of the February edition of SOFT SECTOR ON DISK.

To briefly restate the rules of the contest, begin the program with the number one and end it in a single line. Anything else goes. Entries will be accepted in either Sanyo BASIC or GW-BASIC. Include a printed listing, a title for the program and a short explanation of what it does. Send it to The First Great SOFT SECTOR One-Liner Contest, P.O. Box 385, Prospect, KY 40059.

SPEED

This is a simple program which prints a message of up to 255 characters at any desired output speed. When asked to input the speed rate, you may input a negative number to get the normal Sanyo output speed. However, if you input a positive number, the output speed will become slower in accordance to the speed entered.

```
1 CLS:X=1:INPUT"SPEED(-1 TO 50): ",Y:IN
PUT"MESSAGE: ",A$:CLS:IF Y<0 THEN PRINT
A$:B$=INPUT$(1):GOTO 1:ELSE WHILE MID$(
A$,X,1)<>"":PRINT MID$(A$,X,1);:FOR B=1
TO 50*Y:NEXT B:X=X+1:WEND:PRINT:B$=INPUT
$(1):GOTO 1
```

*Khashy Monsefi
Sherman Oaks, CA*

★★★★★

BATLOOK

This program lets you examine a batch file from BASIC. There is no need to use DOS utilities.

```
1 CLS:INPUT "NAME OF FILE TO EXAMINE "
,Q$:OPEN "I",1,Q$:FOR A=1 TO 1000:IF EOF
(1) THEN CLOSE #1:END ELSE INPUT #1,A$:P
RINT STR$(A);" ";A$:NEXT A:CLOSE #1
```

*Richard Sanders
British Columbia*

ADDRESS

My program is designed for ease of use with the Video RAM Board GW-BASIC. Place the cursor at the second quote after the LPRINT"" statements. Press SHIFT and INS/DEL to get into insert mode. As you type, the quote and cursor move ahead simultaneously. Move to the next LPRINT"" with cursor keys only and repeat the process until done. You can leave the fourth LPRINT"" statement blank at the end.

Line up your envelope in your printer, press PF2, (RUN key in GW-BASIC). It will print once for each pressing of the PF2 key. I leave my tractor paper in to prevent a "printer out of paper" error. Set the head gap lever for multiple copies.

The TAB(1) in the return address is necessary to prevent 'o' from being printed by my Okidata Microline 93 Printer.

The CHR\$(27);CHR\$(11);"08" tabs down eight lines to the address. The tab settings (62) and (40) line up the address.

I saved the listing with my return address, with the "To" address blank. The only printer I have tried it on is my Okidata Microline 93. The code could be changed for other printers.

```
1 LPRINT"JOHN N. LOGRECO"TAB(1):LPRINT"7
22 N. HARVARD BLVD."TAB(1):LPRINT"LOS AN
GELES CAL 90029";CHR$(27);CHR$(11);"08"TAB
(62):LPRINT"ONE LINER CONTEST"TAB(40):
LPRINT"SOFT SECTOR"TAB(40):LPRINT"P.O. B
OX 385"TAB(40):LPRINT"PROSPECT KENTUCKY
40059
```

*John N. Logreco
Los Angeles, CA*

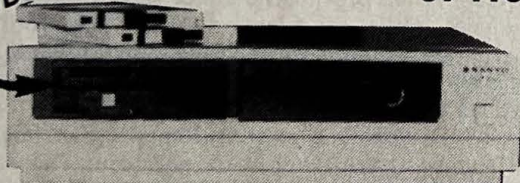
★★★★★

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San Diego, CA 92131
(619) 693-8611

DELPHI

This abbreviated, modified version of Delphi's command card has been created to help our readers who use Sanyo Computers get started quickly on Soft Sector's new MSDOS SIG. It is being reproduced here for your convenience and can be removed, if you wish, and kept near your computer for easy reference.

WELCOME TO DELPHI

Most Delphi commands are self-explanatory. This card will serve as a handy backup reference.

Signing onto Delphi Directly

1. Dial (617)-576-0862.
2. When you have carrier, press [ENTER] once or twice.
3. At "USERNAME" type your membername and [ENTER].
4. At "PASSWORD" type your password and [ENTER].

How To Sign On Using Uninet

1. Dial your local Uninet number.
2. Hit [ENTER][.] [ENTER] at the |x| or "L?" prompt.
3. Type DELPHI or GVC at the SERVICE prompt.
4. Then type your USERNAME and PASSWORD as outlined above.

How To Sign On Using Tymnet

1. Dial your local Tymnet number.
2. When "PLEASE TYPE YOUR TERMINAL IDENTIFIER" appears, type A.
3. When "PLEASE LOG IN" appears, type DELPHI.
4. Then type your USERNAME and PASSWORD as outlined above.

How To Sign On Using Datapac (Canada)

1. Dial your local Datapac number.
2. Type [.] for 300 baud or [.] [.] for 1200 baud.
3. Type Set 2:1, 3:126 for full duplex allowing deletes.
4. Type p 1 3106, DELPHI; [ENTER] (Tymnet)
5. Then type your USERNAME and PASSWORD as outlined above.

To obtain your local access number you may call Tymnet at 800-336-0149 or Uninet at 800-821-5340. If you have problems at any time, call Delphi toll-free at 1-800-544-4005. (Mass. 617-491-3393)

Note: Most commands require only enough letters to be entered to make them unique. For example, to enter CONFERENCE from the Main Menu, simply type "C" and [ENTER]. Do not press [ENTER] after commands using the Control Keys. Most other commands require pressing [ENTER] to activate them.

Typing BYE from any prompt (except the MAIL prompt) will log you off of Delphi.

Typing [?] [ENTER] will generally display a full menu or provide help.

IMMEDIATE COMMANDS (Can be used at any time.)

- /HELP — lists Immediate Commands.
- /ECHO — turn on character echo.
- /NOECHO — turn off character echo. (Used after setting terminal or Uninet or Tymnet node to produce echo.)
- /EXIT — exit to next higher menu or command level.
- /GAG — turn off incoming /PAGE or /SEND messages.
- /LENGTH — shows current number of lines per page on your screen or sets new length.
- /NOGAG — turn on incoming /PAGE or /SEND messages after using /GAG.
- /PROMPT (1, 2, or 3) — 1=no menu, no explanation; 2=no menu, some explanation; 3=menu plus explanation.
- /TIME — show current Eastern time and date.
- /WHOIS (username) — shows profile of member (if available).
- /WIDTH — shows current screen width format or sets new width.

DATABASE

- DIRECTORY — display a directory of all files in the topic.
- EXIT — exit database.
- HELP — get help on database actions and commands.
- READ — read a description of a file. (You must read the file before you download it.)
- SEARCH — search a topic by keyword.
- SET TOPIC — switch from one topic to another without leaving the database section.
- SUBMIT — submit a file for inclusion in a topic. The file must be in your workspace.
- WORKSPACE — enter your workspace area.

In order to access a file, you must first READ (filename). Once you have read a file, the following actions are available:

- DESCRIPTION — displays the file's description again.
- DISPLAY — display/list the file on your screen.
- DOWNLOAD — use with the buffer capture method of downloading.
- EXIT — return to the database prompt.
- HELP — get help on commands and actions.
- LIST — like display; list a file in an unformatted format.
- NEXT — advance to the next group or file. ([ENTER] defaults to NEXT.)
- XMODEM DOWNLOAD — download the file using the Xmodem protocol.

WORKSPACE

Workspace is an area for you to store files and messages of all types. This is where you must first upload a file before submitting it to a database. You can file forum messages for retrieval later. Mail messages can be stored here.

- APPEND — append one file to another.
 - CATALOG — shows which files you have created.
 - COMMON — go to the Delphi Common work area.
 - CREATE — creates file and stores it in your area.
 - DELETE — deletes files you no longer need.
 - DOWNLOAD — download a file from Delphi to your disk.
 - EDIT — create and edit your own text files.
 - EXIT — return to Main Menu.
 - HELP — explanation of WORKSPACE commands.
 - HOME — return home to your private work area.
 - LIST — lists contents of any file in your catalog.
 - PUBLISH — submits your file for Delphi publication in Authors, Members Choice or Newsletters.
 - PURGE — delete all but current version of duplicate files.
 - UPLOAD — upload a file from your computer to Delphi.
 - XDOWNLOAD — download via XMODEM protocol.
 - XUPLOAD — upload via XMODEM protocol.
- From the MSDOS SIG> prompt type DA, and pick a topic, then type WO to reach Workspace.

MSDOS SIG FORUM

- ADD — start a new message thread with a different topic.
- BACK — moves backwards within a thread.
- DELETE — delete a message.
- DIRECTORY — display a directory of messages.
- EDIT — edit the current message.
- EXIT — exit forum.
- FILE — put a copy of a message in your workspace.
- FOLLOW — follow a message thread. Read only the messages of a particular thread.
- FORWARD — send a copy of a message by mail.
- HELP — get help on forum actions and commands.
- HIGH — set/show the high message number.
- MAIL — take you directly to mail.
- NEXT — read next message. ([ENTER] defaults to NEXT.)
- READ — read a message. (Typing message number will read that message.)
- REPLY — reply to a message.
- TOPICS — set/show message topic.

CONFERENCE

- EXIT — return to Main Menu.
- JOIN (groupname) — join existing group or start new one.
- NAME (newname) — change your name or "handle".
- PAGE (username) — pages another user in the system.
- SCHEDULE — transfer you to the Conference Schedule.
- WHO — lists all current users and Conference groups.
- Conference Immediate Commands (use while in Conf).
- /ACCEPT — accept another's page from within current group.
- /ANSWER — respond to or decline PAGE from another user.
- /CANCEL — terminate a PAGE to another user.
- /EXIT — like CONTROL-Z; gets you out of wherever you are.
- /GAG — disable /SEND's from people outside your conference group.*

/GLOCK — lock the group's attributes.*
/GNAME (newname) — change current group name.
/GPASS (password) — select a group password.*
/GPRIVATE — make the group private.*
/GQUIET — makes the group have silent entry and exit.*
/HELP — get help on conference actions and commands.*
/JOIN (groupname) — join an existing group.
/LOG — save a transcript of your conference in your workspace.*
/MAIL — takes you directly to Mail.
/NAME — create a conference nickname (handle).
/PAGE — ask another user to join your group.
/PASS (password) — say the password for admittance into password groups.
/REJECT — a pleasant "No thank you" to whomever is paging.
/REPEAT — turns Echo on or off.*
/RNAME (nickname) — show the username of a person using a handle.
/SCHEDULE — transfer you to the Conference Schedule.
/SEND (username) — send message to current user.
/SQUELCH (username) — ignore messages from a user.*
/TALK — like /JOIN, but doesn't leave current group. /# also works, where # is the number of a conference group. Allows you to participate in more than one group at the same time.
/WHO — lists all current users and Conference groups.
/WHOIS (username) — displays (username) Profile.

*Note: Many of these commands may be preceded by NO. For example, /GAG disables sends, but /NOGAG resumes them.

DELPHI MAIL

Primary Mail Menu (DMail)
CATALOG — lists all Mail files you have created.
EXIT — return to Main Menu.
HELP — explanation of Mail commands.
MAIL — send or read mail. Enters Secondary Mail Menu.
SCAN — display the headers for all unread mail.

Secondary Mail Menu (MAIL)
[ENTER] — depressing the return or carriage return key, will read the next message or more of the current message.
BACK — displays previous message.
DELETE — deletes current (last read) message.
DIRECTORY — lists summary of your mail messages.
DIRECTORY / Folder — lists folder names.
DIRECTORY (folder name) — lists summary of messages in the specified folder. For instance, DIR Pending.
EXIT — returns to Main Menu.
EXTRACT (filename) — adds current message to named file.
FILE (folder name) — adds current message to the named folder.
FORWARD — forward present message to others.
NEXT — skips to next Mail message. ([ENTER] defaults to NEXT.)
READ — displays your Mail messages.
READ (folder name) — reads contents of named Mail folder.
READ (n) — allows you to read selected message number.
READ /NEW — for new MAIL arriving while in MAIL.

REPLY — sends a reply to sender of current message.
SEARCH (string) — searches current Mail file for specified character string.
SELECT — pick messages for delete operation.
SEND — sends message to another user or users.
SEND (filename) — sends file (filename) to other user(s).
SEND/EDIT — calls editor to edit message being sent.
SEND/LAST — uses last message as text for current message.

HELP

Contains a full description of all Delphi services using the same structure as the Delphi Menus.

PEOPLE ON DELPHI

Enter information about yourself; find out about others.
I-AM — add or change information about yourself.
ADD — adds to existing information.
CHANGE — removes all current information about you and request new info.
DELETE — deletes all information under a given keyword heading.
DISPLAY — prints your personal profile.
EXIT — returns to Main Menu.
WHOIS (membername) — displays member profile if available.
SEARCH — find members with particular interests.
BROWSE — browse through member profiles.
LIST-KEYWORDS — shows keywords used in member profiles.

This section is accessed from the Delphi Main Menu. When someone does a /W command in conference, this is the information that will be displayed about a member.

USING-DELPHI

ADVICE FROM DELPHI — answers to most frequently asked questions.
CREDIT POLICY — explanation of current DELPHI policy.
GUIDED-TOUR — a brief version of the tour you took at signon.
MAIL TO SERVICE — send comments and suggestions to DELPHI.
NETWORK-INFO — phone numbers and login procedures for data networks.
PREMIUM-SERVICES — information concerning the extra cost services.
RATES-AND-PRICES — official Delphi rates and prices.
SETUP — terminal and network configuration.
LENGTH — lets you find your screen length and tailor Delphi accordingly.
MENU — choose default menu at sign-on.
PASSWORD — change your password. (frequent changes are recommended.)
PROMPT — select level of menu prompting desired.
SET-TYMNET — experiment with setting network parameters.
TERMINAL — special features for DEC VT100 and VT52 users.
WIDTH — tailor Delphi to fit your screen width.
USAGE-HISTORY — view your to-date activities on Delphi.

DELPHI TERMINAL CONFIGURATION GUIDE

8 bit ASCII*
 1 stop bit*
 no parity*
 asynchronous
 full-duplex
 no auto-linefeed or carriage-return linefeed
 XON-XOFF or Handshaking should be enabled

*sometimes you have to experiment with other combinations such as: (7 bit, 1 stop, noparity) or (8 bit, 1 stop, even or odd parity).

NOTES

To erase a character, Delphi uses the ASCII delete/rubout key which is decimal 127. If necessary, the terminal program should translate the backspace key to a delete/rubout. Unfortunately the networks do not echo the delete/rubout correctly however it will have the desired effect.

Delphi uses the following control characters:

CONTROL-Z — end of input or exit to next higher menu.
CONTROL-S — suspends sending.
CONTROL-Q — resumes sending.
CONTROL-O — skips to end of file or message.
CONTROL-U — cancels input for current line.
CONTROL-R — redisplay current line.
CONTROL-X — cancels everything typed ahead but unsent.
CONTROL-C — cancel current activity and start over.

If a particular control key is causing the terminal program to take some other action, then the terminal program should be reconfigured to use any of the other available control keys in place of the one required by Delphi.

Should you require additional assistance, leave a MAIL message or a FORUM message to MSDOS SIG Manager Kevin Nickols (NICKOLS).

Modified Command Card for SOFT SECTOR Readers

DELPHI

Delphi is a ® trademark of General Videotex Corporation.
 SOFT SECTOR is a ® trademark of FPSS, Ag.
 Sanyo is a ® trademark of Sanyo Business Systems Corp.
 Tymnet is a ® trademark of Tymshare, Inc.
 Uninet is a ® trademark of Uninet, Inc.

Delphi Bureau

Many of you have already joined us on Delphi in SOFT SECTOR's MS-DOS SIG. At the first of this year, membership in the group was already above 1,200 with more than 100 users logging on each day.

Because of the rapid influx of new subscribers we helped bring to Delphi, there have been some problems getting manuals and command cards delivered in a timely manner. In an effort to offset this inconvenience to our readers, we are reproducing a modified version of the Delphi command card on the following two pages.

I have somewhat disappointing news for our members north of the border this month who access Delphi through the Canadian Datapac network. Datapac is a packet-switched network with a very complex rate schedule, levying charges for every kilocharacter of data transferred. They have an arrangement with the U.S. carriers, Tymnet and Uninet, who bill Delphi for the Datapac usage connected through their networks. Because of high charges Delphi is incurring through this arrangement, they have decided to raise their surcharge for Datapac connection from \$3 to \$12 an hour. With Delphi's own charge for service of \$6 an hour, evenings and weekends, this brings the cost to \$18 for the users who must access through the Datapac network (U.S. dollars, that is).

However, there are some alternatives and there will be more in the future. Tymnet has a node in Toronto and plans

to add other major Canadian cities early in the year. Uninet also plans to add Canadian nodes to its network soon, with rates only slightly higher than for the U.S. Also, Bell Canada is apparently running a promotion called INET2000, offering service into Delphi at a round-the-clock rate of \$16 an hour.

I would like to take a moment to mention the names of some people who have helped, in one way or another, get the MS-DOS SIG online and off to an impressive beginning. John Smithers, Bob McDonald, Bob Herring, Bob Jack, Bobby Ballard (lot's of Bobs!) and Leonard Hyre all deserve special thanks from me personally and all the rest of the group members.

Which brings me to a point that I'll direct to all the programmers among you: Even if you don't care to join the SIG, or simply don't have the time to take part, you can still share your programs with other Sanyo users who would love to have them. Send them to SOFT SECTOR (on a disk), along with operating instructions, and clearly state that they are for use on the MS-DOS SIG rather than a submission to the magazine. I will post them in the group's databases and place your name in the display as the owner of the program.

If you haven't joined the SIG yet, I hope to see you online soon. Refer to the Delphi ad on Page 46 of the December issue of SOFT SECTOR for complete details on how to get online. After you do, send your suggestions and comments to me by Delphi Mail: Username (NICKOLS). I'll be waiting to hear from you.

By Kevin Nickols
MS-DOS SIG Manager

Discover What 10 Software Insiders Already Know!

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Changing Logged Drives Within BASIC

During the course of writing another program in GW-BASIC, we wanted the capability of displaying a directory of data files generated by that program. We turned to *SOFT SECTOR* and found "BASIC Menu" by Ray C. Robinson in the October 1985 issue. After studying the program, we discovered we could use it to list things other than BASIC programs. By *POKEing* the ASCII code for the desired extender in locations &H105 through &H107 (or replacing the last three numbers in the first data statement of his program), we can generate a directory showing only the files with that extender. For example, our program uses the extender .ROT for its data files. We replaced the hexadecimal numbers 42,41,53 (BAS) with 52,4F,45 (ROT). Running his program then shows only the files with this extender.

So far, so good. We had another problem, however. We wanted the user to be able to specify a different drive for the data disk (usually B), and run the directory program for that disk. We could not find a way to modify his program to do this, and realized we needed a method of changing the logged drive from within a BASIC program. Since we subscribe to the philosophy that a program should leave

its environment as it finds it, we also needed a way to establish the currently logged drive so we could restore it after any disk activity.

At first we thought we could use the undocumented GW-BASIC *SHELL* command (referred to in "Input/Output," December 1985) to use DOS commands. In experimenting, however, we discovered this required a system disk in the logged drive to work — unacceptable for our purposes. Listings 1 and 2 are the assembler code for the subroutines we came up with to *GETDRIVE* and *SETDRIVE*. These use a DOS service routine to get the current drive number or set it to the specified number (0 is drive A, 1 is B, 2 is C, etc.). Listing 3 is a simple BASIC program that shows how to use these routines.

We will not repeat Robinson's program here. To use it on a disk drive other than A, run *GETDRIVE*; save the current drive; run *SETDRIVE* with *DRIVE%* set to the number of the drive you wish to run the directory against; run his directory program; then run *SETDRIVE* again with the saved drive number.

Sanyo BASIC handles parameter passing in machine language subroutines differently, so we had to modify the routines. Listings 4 and 5 are the Sanyo BASIC versions of *GETDRIVE* (*GDSANYO*) and *SETDRIVE* (*SDSANYO*), and Listing 6 is a Sanyo BASIC program demonstrating their use.

These routines can be used in any BASIC program whenever there is a need to change drives. Many Sanyo owners have dual (or more) drive systems, and programs should be written to allow the option of taking advantage of the convenience this offers (everyone hates to swap disks).

(Dave Neuendorf holds a B.S. in chemistry, an M.S. in metallurgy, and is currently employed as an extractive metallurgist. He programs in 6502 and 8088 assembler, BASIC and FORTH. Dave and his wife Patti, a computer analyst, have established a software development firm, NeuSystems. The author may be contacted at 281 Continental Dr., Pottstown, PA 19464, 215-327-2970.)

By Dave & Patti Neuendorf

Listing 1: GETDRIVE.ASM

```
00000      get_drive segment para
00000      main proc far
                        assume cs:get_drive
                        assume ds:get_drive

00000      55          push bp
00001      8B EC      mov bp,sp
00003      B4 19      mov ah,25
00005      CD 21      int 33
00007      8B 5E 06   mov bx,[bp+6]
0000A      B4 00      mov ah,0
0000C      89 07      mov [bx],ax
0000E      5D          pop bp
0000F      CA 0002    ret 2
0012      main endp
0012      get_drive ends
0012      end
```

Listing 2: SETDRIVE.ASM

```
00000      set_drive segment para
00000      main proc far
                        assume cs:set_drive
                        assume ds:set_drive

00000      55          push bp
00001      8B EC      mov bp,sp
00003      B4 0E      mov ah,14
00005      8B 5E 06   mov bx,[bp+6]
00008      8B 17      mov dx,[bx]
0000A      CD 21      int 33
0000C      5D          pop bp
0000D      CA 0002    ret 2
0010      main endp
0010      set_drive ends
0010      end
```


Listing 3: TESTDRIV.BAS

```

10 REM *****
20 REM *   Program to test Getdrive & Setdrive routines   *
30 REM *   on the Video RAM Board SANYO                   *
40 REM *   by Dave & Patti Neuendorf, Dec. 1985          *
50 REM *****
90 CLEAR ,&HFFDD
100 DEF SEG
110 FOR ADRS=&HFFDD TO 33+&HFFDD
120 READ CODE:POKE ADRS, CODE
130 NEXT
140 GETDRIVE%=&HFFDD:SETDRIVE%=18+&HFFDD
150 DRIVE%=0:REM *** Drive 0 = A, 1 = B, etc. ***
160 CALL GETDRIVE%(DRIVE%)
170 PRINT "Current drive is ";CHR$(65+DRIVE%)
200 INPUT "Change logged drive to";DR$
210 I=INSTR("abAB",DR$):IF I=0 THEN 200
220 IF I<3 THEN DRIVE%=ASC(DR$)-97 ELSE DRIVE%=ASC(DR$)-65
300 CALL SETDRIVE%(DRIVE%)
400 END
500 DATA &h55,&h8b,&hec,&hb4,&h19,&hcd,&h21,&h8b,&h5e,&h06,&hb4,&h00,&h89,&h07,&
&h5d,&hca,&h02,&h00:REM *** Getdrive ***
510 DATA &h55,&h8b,&hec,&hb4,&h0e,&h8b,&h5e,&h06,&h8b,&h17,&hcd,&h21,&h5d,&hca,&
&h02,&h00:REM ***Setdrive ***

```

Listing 4: GDSANYO.ASM

```

;ML routine to pass current drive number to San
yo BASIC
;
get_drive segment para
main proc far
    assume cs:get_drive
    assume ds:get_drive
push bp ;Save segment registers
push ds
mov bp,sp ;Establish reference point in stack
mov ah,25 ;MS-DOS function call number
int 33 ;Call DOS
lds bx,8[bp] ;Get address of variable DRIVE fr

```

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```

000B B4 00      om stack
000D 89 07      mov ah,0 ;Clear high byte of drive number regi
000F 1F          ster
0010 5D          mov [bx],ax ;Put drive number into DRIVE
0011 CA 0004     pop ds ;Restore segment registers
0014             pop bp
0014             ret 4 ;Return to BASIC
0014             main endp
0014             get_drive ends
0014             end

```

Listing 5: SDSANYO.ASM

```

;ML Routine to set drive to that passed by Sany
o BASIC
;
0000      set_drive segment para
0000      main proc far
            assume cs:set_drive
            assume ds:set_drive
0000      push bp ;Save segment registers
0001      push ds
0002      mov bp,sp ;Establish reference point in stack
0004      mov ah,14 ;MS-DOS function number
0006      lds bx,8[bp] ;Put address of DRIVE in ds:bx
0009      mov dx,[bx] ;Get drive number passed by BASIC
000B      int 33 ;Call DOS
000D      pop ds ;Restore segment registers
000E      pop bp
000F      ret 4 ;Return to BASIC
0012      main endp
0012      set_drive ends
0012      end

```

Listing 6: GSDSANYO.BAS

```

10 REM *****
20 REM *   Program to test getdrive and setdrive routines   *
30 REM *   on the non-Video RAM Board SANYO.                 *
40 REM *   By Dave & Patti Neuendorf, Dec. 1985             *
50 REM *****
100 DEF SEG
110 FOR ADRS=0 TO 37
120 READ CODE:POKE ADRS,CODE
130 NEXT
140 GETDRIVE%=0:SETDRIVE%=20
150 DRIVE%=0:REM *** Drive 0 = A, 1 = B, etc. ***
160 CALL GETDRIVE%,DRIVE%
170 PRINT "Current drive is ";CHR$(65+DRIVE%)
200 INPUT "Change logged drive to";DR$
210 I=INSTR("abAB",DR$):IF I=0 THEN 200
220 IF I<3 THEN DRIVE%=ASC(DR$)-97 ELSE DRIVE%=ASC(DR$)-65
300 CALL SETDRIVE%,DRIVE%
400 END
500 DATA &h55,&h1e,&h8b,&hec,&hb4,&h19,&hcd,&h21,&hc5,&h5e,&h8
510 DATA &hb4,&h0,&h89,&h7,&h1f,&h5d,&hca,&h4,&h0:REM *** End getdrive *****
520 DATA &h55,&h1e,&h8b,&hec,&hb4,&he,&hc5,&h5e,&h8,&h8b,&h17
530 DATA &hcd,&h21,&h1f,&h5d,&hca,&h4,&h0:REM *** End setdrive *****

```


BUSINESS SECTOR

CHARLOTTE & BRIAN STONE
Soft Sector Contributing Editors

Q. How can I set the vertical advance on my printer with the DataStar programs? As an example, I have designed a simple receipt with FormGen and then added data with DataStar. I have a Star Power Type (daisy wheel) printer and the receipt prints exactly like it was created in FormGen. The problem is that after each receipt the printer advances the paper 11 or 12 inches (to the top of the next page) depending on the setting of the "Paper" switch. I have 3-inch fan fold paper for the receipts — how can I print one receipt every three inches?

I have tried setting the vertical tab on the printer in BASIC first, using the codes CHR\$(27);CHR\$(80) etc., but as soon as I go back to the system from BASIC and load DataStar to print the receipts, I get a full page paper feed after each receipt. Obviously, DataStar overrides the BASIC settings. I have tried setting the printer in BASIC to print 10 characters per inch prior to printing from CalcStar and it works. How do you set up the printer with DataStar?

Using WordStar, certain dot commands work fine like .op for omitting page numbering or .cp for setting a page break. Others like .lh or .cw do not work. I tried changing line spacing (lines per inch) in the middle of a document using the dot command. In printing, the command was ignored and in fact, where I placed the dot command an extra carriage return

was activated creating an unwanted space. If I remember correctly, when I first placed the dot command .lh there was a message on the screen that all dot commands must be placed at the beginning of the document. I should point out that I have not "installed" the printer in any way.

A question concerning CalcStar: How can you do longer mathematical functions? Either functions within the spreadsheet or outside it (using?)? It is impossible to add several large figures (or cells) for example, as one soon runs out of line space. I keep a small hand-held calculator handy to work out these functions but it would be so much better if one could do it on screen.

Ernst Schneider
Penticon, British Columbia

A. There are two ways to print more than one record per page with DataStar using the ^U (print form) or ^O (print data) commands.

The first way is to reset the page length on your printer (provided it has variable page length control). Add the number of lines you want between records to the number of lines in each record and set the page length at that total. If you are using a different type paper, such as three-inch fan fold, figure the number of lines between perforations. If you are using 11-inch standard paper, you will have to figure carefully how many records you can spread evenly over the length of the paper so you don't get a record printing across the perforation.

The second way is to change a value in DATASTAR.COM using DEBUG. Changing the value at Location 07F3 from 0CH to 0AH will make DataStar send a line feed to your printer between each record instead of the standard form feed. I would like to thank our friend Chuck Thompson for his help in finding the location to change.

Make sure you have DEBUG on your system (DOS) disk. DEBUG is a utility program that came on your master DOS disk. Copy it to your working disk if you haven't already done so, and make a backup copy of DATASTAR.COM to work with. You can put this copy on a separate disk if you have two drives, or you can put it temporarily on your system disk.

Put the system disk with DEBUG.COM on it in the A drive. If you have DATASTAR.COM on a separate disk, put it in the B drive. Type DEBUG B:DATASTAR.COM and press RETURN. If you have both programs on the same disk, type DEBUG DATASTAR.COM and press RETURN.

The screen will display the DEBUG prompt which is a flashing hyphen. Type D7F3 and press RETURN. The screen will display several lines of alphanumeric characters in groups. This is actually a section of the program code for DATASTAR.COM. The top line of this display will read "0BF8:07F0 -- -- 0C E8" and more pairs of alphanumeric characters. Actually there will be blank spaces where I just showed pairs of hyphens. The 0C in that line is Location 07F3.

Now type E7F3 and press RETURN. The screen will display 0BE4:07F3 0C. The first two groups of four are the "address" — the 0C is the value now found at that address. Type 0A (the line will read 0BE4:07F3 0C.0A) and press RETURN.

Now type D7F3 and press RETURN again. The screen will display the alphanumeric soup again, but now there will be an 0A instead of 0C on the top line. Type W and press RETURN. Now the change you have made will be written to the disk. The screen will display "Writing 8100 bytes." Type Q and press RETURN to quit and you will have the system prompt back.

You may want to rename this new version of DataStar to show that you have altered it and to keep it distinguished from the original version. You could call it DSNEW.COM or DSVERS 2.COM or any name that seems logical.



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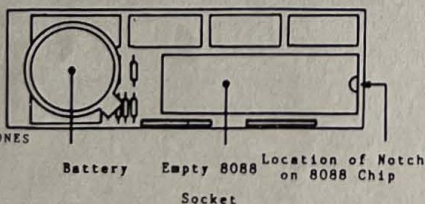
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Now that you have a version of *DataStar* that will only do a line feed after each record, you need to know how to adjust the size of your record. Each *DataStar* record starts with a default length of 18 lines for the purpose of screen display and for printing within the *DataStar* program. You can check this on the *FormGen* screen by moving the cursor down the screen line by line. The first line is numbered 000. The last line is 017. If you press RETURN while the cursor is on Line 017, it will move back up to Line 000. The only way to make the cursor move past Line 017 is to add lines using CONTROL-N to insert more lines.

The only way to print a record less than 18 lines long is to delete the extra lines using CONTROL-Y on the *FormGen* screen. So, depending on the size of the paper you are using and the number of lines of actual text in your records, you must use CONTROL-N or CONTROL-Y to determine how many blank lines you want to print between each record.

The third method is to use *ReportStar* to do the printing and you will not need to make any modifications to *DataStar*. Using *Redit*, design a report screen that matches exactly your *DataStar* screen. Start your layout with three dot commands to control the printing location on the page. They are .OP, .MT0 and .MB0. The dot, of the dot command, is in the print control column. The letters and numbers of the dot commands are placed on the first three lines with the first letter of each in the first column after the print control column. If you are printing on narrow paper, such as labels, you may want to add a fourth dot command .PD0. The .OP eliminates page numbering, the .MT0 eliminates the addition of a top margin, the .MB0 eliminates a bottom margin and the .PD0 eliminates a side margin if you want to print to the extreme left of the paper.

When you have drawn the form and defined all the fields, put spaces in the print column for every line of the form except the beginning dot commands so each line will always print. Add spaces for as many more blank lines as you need to get the spacing you want on each page.

If you need more detail on using the *ReportStar* method, refer to "Making *InfoStar* Shine," *SOFT SECTOR*, October '84, Page 37.

In regard to your problem with the .LH and .CW commands; it is not unusual that they do not function as expected. The "as shipped" version of *WordStar* is installed for the IBM dot matrix printer (i.e., an Epson). It will be necessary for you to reinstall *WordStar* for a daisy wheel printer, exactly which I do not know. I would start with the Diablo 1610, then if necessary, try the Diablo 630. If these do not work, keep trying all of the daisy wheel models until you find one that functions with the PRINT.TST file on your *WordStar* disk.

To do longer mathematical functions in the spreadsheet, you have to break up long formulas and have the component parts (intermediate answers) in different cells. A simpler formula can draw these together for a final answer in one cell; for example, $(+SUM(A18>A20) * ((C12 * C10) / (D5 * B20)) / 12)$. Put $(C12 * C10) / (D5 * B20)$ in one cell. Let's say cell E25. Then enter $(+SUM(A18>A20) * E25) / 12$ in another cell for your final answer.

Q. I have noticed repeated reference by Sanyo owners of a glitch in calculations in Row 32 of *CalcStar*. I am enclosing a portion of a *CalcStar* spreadsheet which includes Row 32. (The total spreadsheet is 186 rows long.) Unless my eyesight (and mind) is failing me in my old age, Row 32 is calculated

correctly. I am also enclosing a copy of the CSDUMP which encompasses Row 32 for your examination.

Robert L. Taylor
Fort Wayne, IN

A. I'm sorry to tell all of you that while Mr. Taylor's Row 32 was calculated correctly, this was not the miracle we have been waiting for.

We have spent a good deal of time finding out just what Row 32 in *CalcStar* will or will not do. As you have noticed in "Business Sector," many people have written to complain that Line 32 won't calculate. That is not exactly true. Line 32 will calculate many formulas. Here are some examples:

```
+SUM(A31+1)
1.5*A32
+SUM(A32+B32+C32)
+SUM(A32+(B32/(C32*D32)))
+SUM(A1>A31)
```

What it will not do, is recognize a horizontal range across itself (such as $A32>H32$). Therefore, it will not calculate a function containing such a range. Again some examples:

```
+SUM(A32>H32)
AVG(A32>C32)
MAX(A32>D32)
MIN(A32>F32)
CNT(A32>G32)
```



1-800-437-4757 EXT. 241

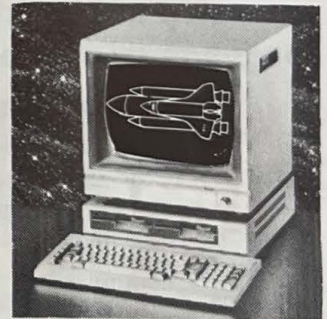
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Row 32 will accept such formulas and will give the correct answer upon entry of the formula if the referenced cells already contain numeric data. However, as soon as you recalculate, accuracy is gone. It is possible to get around this with the SUM function if the desired range is not too long. Example:

+SUM(A32+B32+C32+D32+E32)

There isn't room to enter a sixth cell before you reach CalcStar's entry limit.

Other functions, such as AVG, MAX, MIN and CNT, are dependent on a range being shown and can't use the substitute of naming individual cells.

Vertical ranges that cross Row 32 will be all right as long as the cell that is included from Row 32 does not contain a horizontal range of Row 32. For example, if you have the formula +SUM(D1>D35) placed on your spreadsheet in Cell D36, you will get the correct answer if Cell D32 contains a straight numeric figure, the formula +SUM(A31>C31), or even +SUM(A32+B32+C32). If Cell D32 contains the formula +SUM(A32>C32), you will get an incorrect answer in both Cell D32 and Cell D36.

One major surprise we encountered during our investigation was finding the same Row 32 error in the Kaypro MS-DOS version of CalcStar we tested. This was Version 1.46 for a Kaypro 16 (also bundled software, just like ours from Sanyo). That pretty much shifts any blame from Sanyo's shoulders, but still doesn't get us any answer from MicroPro.

Q. Is it possible to print lines in DataStar? I want to make a form where people can put missing information on the line if I don't have that information. For example:

Name John Smith
Address 121 Santa Fe
Age _____

It would be helpful to be able to print the lines even when there is information in that space.

Rev. Robert Bohlmann
Kokomo, IN

A. It is possible to create forms with FormGen that can be used as blank forms to be filled in by hand or a typewriter. Draw any form you want, then go back and define each field (CONTROL-R) that you want to have a blank line with the answer 'Y' for yes to the prompt "Pad field?(Y/N)."

The next prompt will be "Enter pad character:". Answer with the underline (_). Next answer 'Y' to the prompt "Record edit characters?(Y/N)."

When you are finished, save the form and chain DataStar. For each field on the form, enter one underline character as data and go on to the next field. When you have finished the last field, type CONTROL-B to end entry and press RETURN to save the record. Although you can't see it, DataStar will fill in the balance of each field with underlines. Just this one record will be all you need to run a blank form.

Change to one of the two scan modes, either (I) index scan or (D) data scan. Make sure your printer is ready, and type

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CONTROL-U. Since there is only one record in your data file, this will print one blank form with underlines filling each field. You can use this one copy as a master to run multiple copies on a copy machine.

If you don't have easy access to a copy machine and want to run multiple copies on your printer, there are two methods to choose from:

- 1) Fill a data file with as many records full of underlines as you want copies and use the ^U method above.
- 2) Use *Redit* to create a report form that matches your data form exactly. Save the report and run it once to disk instead of the printer. Then use the *MailMerge* option of *WordStar* to run multiple copies of the resulting .PRN file.

Another application for underlines would be a printed form with some data provided by a data file and blank lines shown where data is missing. The missing data could be filled in by hand on the form and added to the data file later.

Using the CONTROL-U method from *DataStar* to print copies of each record in a file would give results that look something like this:

NAME: CHARLOTTE STONE_____
 ADDRESS: PO BOX 385_____
 CITY,STATE,ZIP: PROSPECT_____, KY 40059
 AGE:_____

Using CONTROL-D to space between words in each field would look like this:

NAME: CHARLOTTE STONE_____
 ADDRESS: PO BOX 385_____
 CITY,STATE,ZIP: PROSPECT_____, KY 40059
 AGE:_____

By creating a report to match the data form and using the CONTROL-V (in *Redit*) to insert a CONTROL-S print command (for underlining) on both sides of all fields to be underlined, you can get the following results:

NAME: CHARLOTTE STONE_____
 ADDRESS: PO BOX 385_____
 CITY,STATE,ZIP: PROSPECT, KY 40059
 AGE:_____

Just a reminder — the only way to get an underline under both text and blank lines in a field is to use underlines to pad the field in *DataStar* and ^V^S in *Redit* in combination. *DataStar* alone can't give you lines under text, and *Redit* alone will only underline text.

(Charlotte Stone, office manager for the Detroit office of the Shaw/Walker Co., has been using a Sanyo computer in her daily work routine since October of 1983. Brian Stone has been using a variety of Sanyo computer since May of 1983. Both have been involved with computers since their first purchase in July of 1978.)



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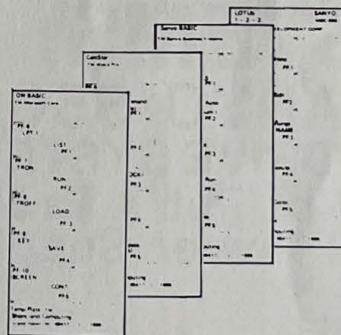
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SOFT TALK

The following products recently have been received by SOFT SECTOR, examined by our magazine staff and approved for the *Soft Sector Seal of Certification*, your assurance that we have seen the product and have ascertained that it is what it purports to be.



SUPERTAX '85 is a complete tax planning program which consists of four modules: Tax Planning, Tax Return Printing, Printing a Business Return and Calculating Depreciation.

Documentation includes tips on ease of use of modules, printing instructions, helpful suggestions, a tutorial and an explanation of input items.

SuperTax '85 requires 192K and is currently available for \$149 plus \$3 S/H from Trans-San Industries, P.O. Box 2167, Simi Valley, CA 93062.

* * *

THE BASEBALL STATBOOK is a program which helps maintain player and team baseball/softball statistics. It has been designed to help reduce the time and effort in keeping team statistics.

The Baseball Statbook can be used by anyone who is responsible for keeping team or league statistics. Records can be added, changed and deleted as your needs

require. The system comes with the team file already created with one "dummy" record on the file consisting of all "D's" in the player name field.

The team file consists of two files on disk: a data file named TEAM.FIL and an indexed file named TEAM.KEY. The indexed file is structured to point to records in the data file thereby enabling rapid access and display of individual records.

The Baseball Statbook is currently available for \$49 from RJL Systems, 106 New Haven Avenue, Milford, CT 06460; (203) 878-0376.

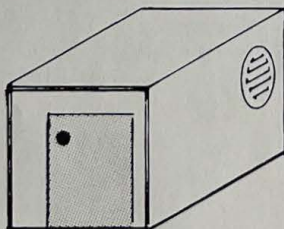
* * *

OPUS II & III are communications programs which were written just for the Sanyo MBC-550/555. *Opus II* is for use on the Sanyo without the Video RAM Board and *Opus III* is designed for use with the Video RAM Board. Both programs contain a variety of features which utilize the Sanyo to its fullest extent.

The major design emphasis of *Opus* is to produce a solid Xmodem transfer. Features of *Opus* include: auto logon, auto keys, Xmodem protocol, DC2/DC4 protocol, manual ASCII capture, reset

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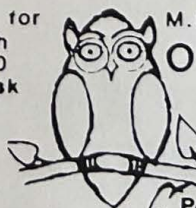
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Opus II & III require DOS 2.11 and are currently available for \$20 from Bob Jack Software, 8371 White Road, Burbank, OH 44214; (216) 948-2059.

KEY ENTRY III is a PC data entry software system with full validation, editing and record searching capabilities. It has been designed for ease of use and has been specially tailored for data entry environments that have little or no programmer support.

Key Entry III allows you to replace keypunches, dedicated systems and other data entry equipment; offload mainframe data entry processing to micros; develop distributed data entry systems; and move data entry out to customer premises or remote sites.

Key Entry III requires DOS 2.11, 192K and an MBC-675, 775 or 885. It is currently available for \$895, \$10 S/H from

Southern Computer Systems, Inc. (SCS), P.O. Box 55473, Birmingham, AL 35255; (205) 251-2985.

* * *

SUPER BATCH is an MS-DOS extended batch file utility which provides commands and responses for almost any MS-DOS program. It provides batch processing power within MS-DOS programs. Complete application systems are built within one *SuperBatch* file that executes DOS commands, runs programs, supplies input to programs and creates program output that is used as another program's input. *SuperBatch* also allows you to build totally integrated applications.

Entire program command input can be stored in a *SuperBatch* file and activated by one command, thereby saving you time from entering the commands through the keyboard, thus allowing you to spend time on other important activities.

SuperBatch is currently available for \$79.95 from Merrill Street Software, 251 Merrill Street, Birmingham, MI 48011; (313) 645-5280.

Submitting Material

Contributions to **SOFT SECTOR** are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

- **FORMAT:** Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material which is longer than that. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550, 555 or 775. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capitals. Use upper- and lowercase. While it is a big help to us in typesetting for you to send your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.

- **WHAT TO WRITE:** Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send an SASE to: Submissions Editor, **SOFT SECTOR**, The Falsoft Building, P.O. Box 385, Prospect, KY 40059. We will send you comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.

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FYI. The *Sanyo MBC-550/555 Beginner & Intermediate Guide* is currently in its second printing. For those of you who own a copy of the first printing, here is a listing of a few typographical errors found in the first printing after distribution: Page 11, "Five of the 85 keys . . ." should be "Fifteen of the 85 keys . . ."; Page 12, An up-arrowhead symbol should be shown at the top of the 6 key in Figure 2.1; Page 14, The reference to Figure 14.4 below Table 2.1 should be "Figure 14.5"; Page 15, Note 2 under Figure 2.2, the word "on" should be "only"; Page 20, "MD-DOS" should be MS-DOS; Page 25, In the text "The first part of Line 30 should now read: 30 Y=100*SIN . . .", replace "30" with "40" in both places; Page 55, Third line from bottom, "120" should be "110"; Page 90, Third line from bottom, "110" should be "120" and "130" should be "160"; Page 119, In the text description of Line 60, "ENDS" should be "ENDs"; Page 134, Figure 9.1: "(415,128)" should be "(490,128)"; Page 150, The "GO TO3300" in program Line 4060 should be "GOTO 4160" (This is correct on the disk); Page 159, In the second line of text, "IBASIC" should be "SBASIC"; Page 166, In the Note, "the last one specified" should be "the last one prompted"; Page 167, Add at the bottom: "(With MS-DOS 2.11, CTRL-P toggles the printer on and off.)"; Page 170, Add to third text line: "(CTRL-P for MS-DOS 2.11.)."

1986 PROGRAMMER'S MARKET is a computer reference book which gives you the facts, details and contacts you need to

sell your microcomputer programs — or to locate contract programming and technical writing opportunities — to turn your programming skills into freelance income. This book tells you how and where to sell your programs and provides easy-to-use features such as five indexes to help you locate publishers fast. It also provides a glossary of terms and a new section of software agent listings and advice.

This 344-page paperback also provides interviews with freelance programmers and computer industry executives who share advice on how to sell your work. *1986 Programmer's Market* is currently available for \$16.95 from Writer's Digest Books, 9933 Alliance Road, Cincinnati, OH 45242; (513) 984-0717.



The *Seal of Certification* program is open to all manufacturers of products for Sanyo MBC-550/555 and 775 computers, regardless of whether they advertise in *SOFT SECTOR*.

By awarding a *Seal*, the magazine certifies the product does *exist* — that we have examined it and have a sample copy — but this *does not* constitute any guarantee of satisfaction. As soon as possible, these hardware or software items will be forwarded to *SOFT SECTOR* reviewers for evaluation.

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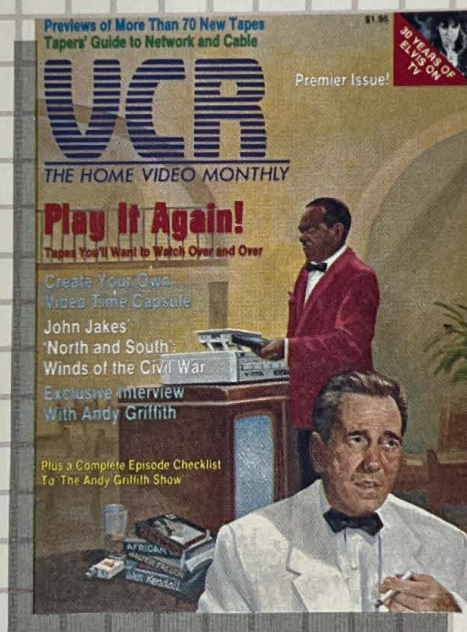
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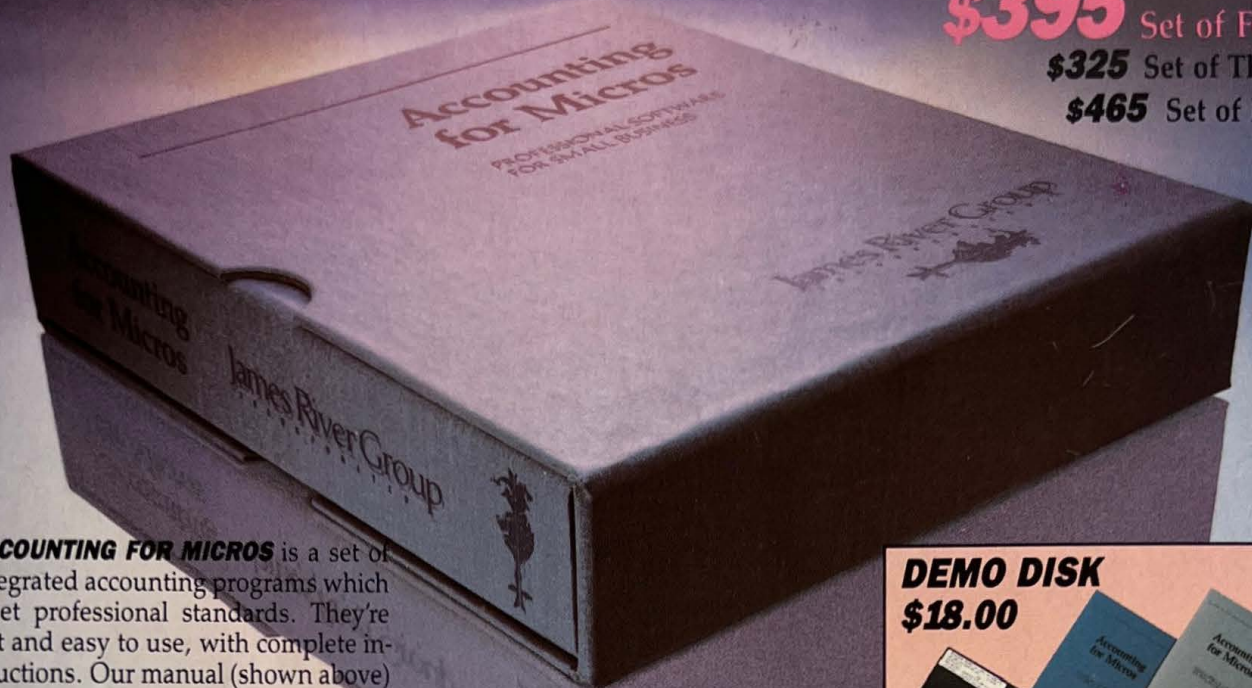
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